

**REMARKS**

Claims 1-13 and 34-62 are currently pending in the above-referenced patent application. The specification and claims 1 and 62 have been amended by way of the present Amendment. Claims 14-33 have been canceled by way of the present Amendment.

**In the Office Action:** Claims 1-13 and 34-62 were rejected under 35 U.S.C. § 112, first paragraph for purportedly failing to comply with the enablement requirement. Claims 8 and 12 were rejected under 35 U.S.C. § 112, first paragraph for purportedly failing to comply with the written description requirement. Claims 1-13 and 34-62 were rejected under 35 U.S.C. § 112, second paragraph. Claims 34-62 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Henry et al. (U.S. Patent No. 5,845,215) in view of Tajima (U.S. Patent No. 5,381,444).

**In response to the rejection of claims 1-13 and 34-62 under 35 U.S.C. § 112, first paragraph as purportedly failing to comply with the enablement requirement, the Applicants respectfully request reconsideration.** The first paragraph of 35 U.S.C. § 112, states that “[t]he specification shall contain a written description of the invention ... to enable any person skilled in the art ... to make and use the same...” A specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented **must** be taken as in compliance with the enabling requirement of the first paragraph of § 112 **unless** there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support. *Fiers v. Revel*, 984 F.2d 1164, 25 USPQ2d 1601, 1749 (Fed. Cir. 1993).

On page 3, lines 4-5 of the Office Action, it is stated that “[t]he specification does not adequately describe how the bearer service combination type is used to decide which bearer service profile type is to be used...” However, on page 7 of the specification, lines 21-22, it is disclosed that “[a] mobile station decides a bearer service profile type according to the bearer service combination type decided by the AP layer and the measured radio environment result...” The Applicants respectfully submit that at least this disclosure would enable one of ordinary skill in the art to make and use the claimed invention.

The Office Action states on page 3, lines 10-12 that “[t]he specification does not adequately describe how the bearer service profile type is used to select any particular transport format that is within a transport format combination set...” However, on page 8 of the specification, lines 7-10, it is disclosed that “...after deciding the bearer service profile type, the RRC layer of the mobile station assigns a transport format combination set...” Further, it is disclosed on page 8 of the specification, lines 13-14 that “...the MAC sublayer of the mobile station selects appropriate transport formats within a transport format set...” Accordingly, the Applicants respectfully submit that at least these disclosures in the specification would enable one of ordinary skill in the art to make and use the claimed invention.

On page 3, lines 16-18 of the Office Action, it is stated that “[t]he specification does not adequately describe how the periodic, on-demand, and threshold information is related to the different environmental models...” However, on page 8 of the specification, lines 1-3, it is disclosed that “[t]he measured radio environment result may generally be classified into three models according to the obtained periodic, on-demand and threshold information...”

Accordingly, the Applicants respectfully submit that at least this disclosure would enable one of ordinary skill in the art to make and use the claimed invention.

On page 4, lines 2-4 of the Office Action, it is stated that “[t]he specification does not adequately describe how the transport format indicator is used to configure the dynamic part and semi-static part...” However, on page 8 of the specification, lines 22-24, “...setting attributes of a dynamic part and semi-static part of the selected transport formats...” are disclosed. Accordingly, the Applicants respectfully submit that at least this disclosure of the specification would teach one of ordinary skill in the art to make and use the claimed invention.

On page 4, lines 11-12 of the Office Action, it is stated that “[t]he specification does not adequately describe how the bearer service profile type is used to assign a transport format combination set...” However, on page 8 of the specification, lines 7-9, it is disclosed that “...after deciding the bearer service profile type, the RRC layer of the mobile station assigns a transport format combination set...” Accordingly, the Applicants respectfully submit that at least this disclosure of the specification would enable one of ordinary skill in the art to make and use the claimed invention.

On page 4, lines 16-17 of the Office Action, it is stated that “[t]he specification does not adequately describe how a radio environment measurement is determined...” However, on page 7 of the specification, lines 19-20, it is disclosed that “...a radio environment is measured...” Further, on page 7, line 23, “...the measured radio environment result...” is disclosed. Accordingly, the Applicants respectfully submit that at least these disclosures of the specification would enable one of ordinary skill in the art to make and use the claimed invention.

On pages 4, line 20 through page 5, lines 1 of the Office Action, it is stated that “[c]laim 46 recites that the environment measurement determination comprises determining one of an indoor, pedestrian and vehicular environment model. The specification does not adequately describe how such models are determined...” However, on page 8 of the specification, lines 3-5, it is disclosed that “...an indoor environment model, an outdoor to indoor and pedestrian environment model and a vehicular environment model” are disclosed. Accordingly, in view of at least this disclosure, the Applicants respectfully submit that one of ordinary skill in the art would be enabled to make and use the claimed invention.

On page 5, lines 4-6 of the Office Action, it is stated that “[t]he specification does not adequately describe how the bearer service type and radio environment measurement are used to determine and transmit a transport format combination set...” However, on page 7, lines 21-23 of the specification, it is disclosed that a “...mobile station decides a bearer service profile type according to the bearer service combination type decided by the AP layer and the measured radio environment result...” Further, on page 8 of the specification, lines 7-9, it is disclosed that “...after deciding the bearer service profile type, the RRC layer of the mobile station assigns a transport format combination set...” The Applicants respectfully submit that at least this disclosure would enable one of ordinary skill in the art to make and use the claimed invention.

On page 5, lines 10-12 of the Office Action, it is stated that “[t]he specification does not adequately describe how the transport format indicator and transport format combination set are used to configure the transport format combination indicator...” However, on page 9 of the specification, lines 13-15, it is disclosed that a “...mobile station appends a transports format

combination indicator to a dedicated physical control channel (DPCCH) according to the transport format combination set...” Further, page 8 of the specification, lines 22-25 discloses that “...setting attributes of a dynamic part and semi-static part of the selected transport formats according to the transport format combination set...” The Applicants respectfully submit that at least this disclosure would enable one of ordinary skill in the art to make and use the claimed invention.

As discussed above, the specification does contain a written description of the invention to enable any person skilled in the art to make and use the claimed invention, in compliance with 35 U.S.C. §112, first paragraph. Further, since there is no reason to doubt the objective truth that the enabling requirement of 35 U.S.C. §112, first paragraph is met, the specification of the present application must be taken as in compliance of this enablement requirement. *Fiers v. Revel*, 984 F.2d 1164, 25 USPQ2d 1601, 1749 (Fed. Cir. 1993). At least for these reasons, the rejection of claims 1-13 and 34-62 under 35 U.S.C. §112, first paragraph should be withdrawn.

**In response to the rejection of claims 8 and 12 under 35 U.S.C. §112, first paragraph as purportedly failing to comply with the written description requirement, the Applicants respectfully request reconsideration.** The Office Action states on page 5, that “...the specification only described a setup size as being associated with a dynamic part and not the size of the block set.” In response, the Applicants have amended the specification on page 9, lines 2-3 to correct a typographical error. Particularly, the amendment to the specification on page 9 replaces “transport block setup size” with “transport block set size”. The Applicants respectfully submit that this typographical error would be appreciated as merely a typographical

error to one of ordinary skill in the art. Accordingly no new matter has been entered.

**In response to the rejection of claims 1-13 and 34-62 under 35 U.S.C. § 112, second paragraph, the Applicants respectfully request reconsideration.** The second paragraph of 35 U.S.C. § 112, sets forth two separate requirements. First, the claims must set forth the subject matter that applicants regard as their invention. Second, the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant. Further, when the specification states the meaning that a term in the claim is intended to have, the claim is examined using that meaning, in order to achieve a complete exploration of the applicant's invention and its relation to the prior art. *In re Zletz*, 893 F.2d 319, 13 USPQ2d 1320 (Fed. Cir. 1989).

The Office Action states on page 6 that there is lack of antecedent basis for “said bearer service” in line 5 of claim 1. Accordingly, the Applicants have amended claim 1 to correct this typographical error. On page 7 of the Office Action, it is identified that the recitation of “the transport format indicator” in line 8 of claim 62 lacks antecedent basis. Accordingly, the Applicants have amended claim 62 to correct this typographical error.

In the rejection of 35 U.S.C. §112, second paragraph, the Examiner states that several terms used in the claims are unclear. However, the Applicants respectfully submit that these terms are clear to those of ordinary skill in the art. Accordingly, as a courtesy, the Applicants have attached as an Appendix “Vocabulary for 3GPP Specifications” encompassed in document 3GPP TR 21.905.

**In response to the rejection of claims 34-60 under 35 U.S.C. §103(a) as being unpatentable over Henry et al. in view of Tajima, the Applicants respectfully request reconsideration.** These claims recite determining a transport format combination set according to at least one type of wireless service and a radio environment measurement.

Henry et al. relates to operating mobile stations of wireless communication systems in multiple modes by external control. It is stated in the Office Action on page 8, that “Henry does not disclose determining a radio environment measurement...” Accordingly, unlike the recitations of claims 34-60, Henry et al. can not disclose determining a transport format combination set according to said at least one type of wireless service and a radio environment measurement.

Tajima relates to a radio environment measuring system. Tajima does disclose in column 1, a radio environment measuring system for measuring a propagation state of radio waves. However, this disclosure does not alleviate the deficiency of Henry et al. of not disclosing determining a transport format combination set according to at least one type of wireless service and a radio environment measurement, as recited in claims 34-60. Furthermore, neither Henry et al. nor Tajima include any disclosure of a transport format combination set. At least for these reasons, a *prima facie* case of obviousness has not been established.

**In response to the rejection of claim 61 under 35 U.S.C. §103(a) as being unpatentable over Henry et al. in view of Tajima, the Applicants respectfully request consideration.** This claim recites determining and transmitting a transport format combination set based on a bearer service type and radio environment information. For similar reasons as

discussed above, neither Henry et al. nor Tajima, alone or in combination, teach or suggest a transport format combination set based on bearer service type and radio environment information. At least for this reason, a *prima facie* case of obviousness has not been established.

**In response to the rejection of claim 62 under 35 U.S.C. § 103(a) as being unpatentable over Henry et al. in view of Tajima, the Applicants respectfully request reconsideration.** This claim recites determining and transmitting a transport format combination set based on a bearer service type. Henry et al. and Tajima have been discussed above. However, neither Henry et al. nor Tajima disclose a transport format combination set or a bearer service type. Accordingly, neither Henry et al. nor Tajima, alone or in combination, teach or suggest determining and transmitting a transport format combination set based on bearer service type. At least for this reason, a *prima facie* case of obviousness has not been established.



**CONCLUSION**

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, Daniel H. Sherr, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,  
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Vocabulary for 3GPP Specifications  
(Release 6)**



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## Foreword

This Technical Specification has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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- x the first digit:
  - 1 presented to TSG for information;
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- z the third digit is incremented when editorial only changes have been incorporated in the document.

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## 1 Scope

The purpose of this report is to identify specialist technical terms used within the 3GPP project for the purposes of specifying service requirements. The motivations for this are:

- To ensure that editors use terminology that is consistent across specifications.
- To provide a reader with convenient reference for technical terms that are used across multiple documents.
- To prevent inconsistent use of terminology across documents.

This document is a collection of terms, definitions and abbreviations related to the baseline documents defining 3GPP objectives and systems framework. This document provides a tool for further work on 3GPP technical documentation and facilitates their understanding.

The terms, definitions and abbreviations as given in this document are either imported from existing documentation (ETSI, ITU or elsewhere) or newly created by 3GPP experts whenever the need for precise vocabulary was identified.

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## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] Void

- [2] TS 25.990: "Technical Specification Group (TSG) RAN; Vocabulary".
- [3] "The Path towards UMTS - Technologies for the Information Society" – Report #2, UMTS Forum.

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## 3 Terms and definitions

### 0-9

**3GPP system:** the telecommunication system standardised by the 3GPP consisting of a core network and a radio access network that may be either GERAN or UTRAN, or both.

**3GPP System core network:** refers in this specification to an evolved GSM core network infrastructure.

**3GPP System coverage:** see coverage area.

**3GPP System IC Card:** An IC card (or 'smartcard') of defined electromechanical specification which contains at least one USIM.

**3GPP System mobile termination:** part of the 3GPP System Mobile Station which provides functions specific to the management of the radio interface (Um).

**3V technology Smart Card:** A Smart Card operating at  $3V \pm 10\%$  and  $5V \pm 10\%$ .

**1.8V technology Smart Card:** A Smart Card operating at  $1.8V \pm 10\%$  and  $3V \pm 10\%$ .

**3V technology Terminal:** A terminal operating the Smart Card - Terminal interface at  $3V \pm 10\%$  and  $5V \pm 10\%$ .

**1.8V technology Terminal:** A terminal operating the Smart Card - Terminal interface at  $1.8V \pm 10\%$  and  $3V \pm 10\%$ .

### A

**A/Gb mode:** mode of operation of the MS when connected to the Core Network via GERAN and the A and/or Gb interfaces.

**Acceptable Cell:** A cell that the UE may camp on to make emergency calls. It must satisfy certain conditions.

**Access conditions:** A set of security attributes associated with a file.

**Access delay:** The value of elapsed time between an access request and a successful access (source: ITU-T X.140).

**Access Stratum SDU (Service Data Unit):** Unit of data transferred over the access stratum SAP (Service Access Point) in the Core Network or in the User Equipment.

**Access protocol:** A defined set of procedures that is adopted at an interface at a specified reference point between a user and a network to enable the user to employ the services and/or facilities of that network (source: ITU-T I.112).

**Accounting:** The process of apportioning charges between the Home Environment, Serving Network and User.

**Accuracy:** A performance criterion that describes the degree of correctness with which a function is performed. (The function may or may not be performed with the desired speed.) (source: ITU-T I.350).

**Active communication:** a UE is in active communication when it has a CS connection established. For PS active communication is defined by the existence of one or more Activated PDP contexts. Either one or both of the mentioned active communications may occur in the UE.

**Active Set:** Set of radio links simultaneously involved in a specific communication service between an UE and a UTRAN access point.

**Adjacent Channel Leakage power Ratio (ACLR):** The ratio of the average power centered on the assigned channel frequency to the average power centered on an adjacent channel frequency. In both cases the average power is measured with a filter that has Root Raised Cosine (RRC) filter response with roll-off  $\alpha = 0.22$  and a bandwidth equal to the chip

rate.

**Air Interface User Rate:** The user rate between Mobile Termination and IWF. For T services it is the maximum possible AIUR not including padding. For NT services it is the maximum possible AIUR.

**ALCAP:** Generic name for the transport signalling protocols used to set-up and tear-down transport bearers.

**Allowable PLMN:** A PLMN which is not in the list of forbidden PLMN in the UE.

**Applet:** A small program that is intended not to be run on its own, but rather to be embedded inside another application

**Application:** an application is a service enabler deployed by service providers, manufacturers or users. Individual applications will often be enablers for a wide range of services. (UMTS Forum report #2) [3]

**Applications / Clients:** These are services, which are designed using service capability features.

**Application Interface:** Standardised Interface used by application/clients to access service capability features.

**Application protocol:** The set of procedures required by the application.

**ASCI** Generic name to identify the services VGCS, VBS and eMLPP.

**Authentication:** A property by which the correct identity of an entity or party is established with a required assurance. The party being authenticated could be a user, subscriber, home environment or serving network.

**Available PLMN:** A PLMN where the UE has found a cell that satisfies certain conditions.

**Average power:** The thermal power as measured through a root raised cosine filter with roll-off  $\alpha = 0.22$  and a bandwidth equal to the chip rate of the radio access mode. The period of measurement shall be one power control group (timeslot) unless otherwise stated.

## B

**Base Station:** A base station is a macrocell, microcell or picocell site and consists of transmitters generating radio frequency electromagnetic energy and receivers in a cabin or cabinet. A base station is connected to antennas by feeder cables.

**Baseline capabilities:** Capabilities that are required for a service-less UE to operate within a network. The baseline capabilities for a UE include the capabilities to search for, synchronise with and register (with authentication) to a network. The negotiation of the UE and the network capabilities, as well as the maintenance and termination of the registration are also part of the required baseline capabilities.

**Base Station Controller:** This equipment in the BSS is in charge of controlling the use and the integrity of the radio resources.

**Base Station Subsystem:** Either a full network or only the access part of a GERAN offering the allocation, release and management of specific radio resources to establish means of connection between an MS and the GERAN. A Base Station Subsystem is responsible for the resources and transmission/reception in a set of cells.

**Baseline Implementation Capabilities:** Set of Implementation capabilities, in each technical domain, required to enable a UE to support the required Baseline capabilities.

**Basic OR** Basic Optimal Routeing

**Basic telecommunication service:** This term is used as a common reference to both bearer services and teleservices.

**Bearer:** A information transmission path of defined capacity, delay and bit error rate, etc.

**Bearer capability:** A transmission function which the UE requests to the network.

**Bearer service:** A type of telecommunication service that provides the capability of transmission of signals between access points.

**Best effort QoS:** The lowest of all QoS traffic classes. If the guaranteed QoS cannot be delivered, the bearer network



delivers the QoS which can also be called best effort QoS.

**Best effort service:** A service model which provides minimal performance guarantees, allowing an unspecified variance in the measured performance criteria.

**Billing:** A function whereby CDRs generated by the charging function are transformed into bills requiring payment.

**Broadcast:** A value of the service attribute "communication configuration", which denotes unidirectional distribution to all users (source: ITU-T I.113).

## C

**Cable, Connector, and Combiner Losses (Transmitter) (dB):** The combined losses of all transmission system components between the transmitter output and the antenna input (all losses in positive dB values).

**Cable, Connector, and Splitter Losses (Receiver) (dB):** The combined losses of all transmission system components between the receiving antenna output and the receiver input.

**CAC (Connection Admission Control):** A set of measures taken by the network to balance between the QoS requirements of new connections request and the current network utilisation without affecting the grade of service of existing/already established connections.

**Call:** a logical association between several users (this could be connection oriented or connection less).

**Call Detail Record (CDR):** A formatted collection of information about a chargeable event (e.g. time of call set-up, duration of the call, amount of data transferred, etc) for use in billing and accounting. For each party to be charged for parts of or all charges of a chargeable event a separate CDR shall be generated, i.e more than one CDR may be generated for a single chargeable event, e.g. because of its long duration, or because more than one charged party is to be charged.

**Camped on a cell:** The UE is in idle mode and has completed the cell selection/reselection process and has chosen a cell. The UE monitors system information and (in most cases) paging information. Note that the services may be limited, and that the PLMN may not be aware of the existence of the UE within the chosen cell.

**Capability Class:** A piece of information which indicates general 3GPP System mobile station characteristics (e.g. supported radio interfaces,...) for the interest of the network.

**Card session:** A link between the card and the external world starting with the ATR and ending with a subsequent reset or a deactivation of the card.

**CBS DRX cycle:** The time interval between successive readings of BMC messages.

**Cell:** Radio network object that can be uniquely identified by a User Equipment from a (cell) identification that is broadcasted over a geographical area from one UTRAN Access Point. A Cell is either FDD or TDD mode.

**Cell Radio Network Temporary Identifier (C-RNTI):** The C-RNTI is a UE identifier allocated by a controlling RNC and it is unique within one cell controlled by the allocating CRNC. C-RNTI can be reallocated when a UE accesses a new cell with the cell update procedure.

**Cellular Text telephone Modem (CTM):** A modulation and coding method intended for transmission of text in voice channels for the application of real time text conversation.

**Chargeable Event:** An activity utilising telecommunications network infrastructure and related services for user to user communication (e.g. a single call, a data communication session or a short message), or for user to network communication (e.g. service profile administration), or for inter-network communication (e.g. transferring calls, signalling, or short messages), or for mobility (e.g. roaming or inter-system handover), which the network operator wants to charge for. The cost of a chargeable event may cover the cost of sending, transporting, delivery and storage. The cost of call related signalling may also be included.

**Charged Party:** A user involved in a chargeable event who has to pay parts or the whole charges of the chargeable event, or a third party paying the charges caused by one or all users involved in the chargeable event, or a network operator.

**Charging:** A function whereby information related to a chargeable event is formatted and transferred in order to make it possible to determine usage for which the charged party may be billed.

**Cipher key:** A code used in conjunction with a security algorithm to encode and decode user and/or signalling data.

**Closed group:** A group with a pre-defined set of members. Only defined members may participate in a closed group.

**Coded Composite Transport Channel:** A data stream resulting from encoding and multiplexing of one or several transport channels.

**Common Channel:** A Channel not dedicated to a specific UE.

**Confidentiality:** The avoidance of disclosure of information without the permission of its owner.

**Connected Mode:** Connected mode is the state of User Equipment switched on and an RRC connection established.

**Connection:** A communication channel between two or more end-points (e.g. terminal, server etc.).

**Connection mode:** The type of association between two points as required by the bearer service for the transfer of information. A bearer service is either connection-oriented or connectionless. In a connection oriented mode, a logical association called *connection* needs to be established between the source and the destination entities before information can be exchanged between them. Connection oriented bearer services lifetime is the period of time between the establishment and the release of the connection. In a connectionless mode, no connection is established beforehand between the source and the destination entities; the source and destination network addresses need to be specified in each message. Transferred information cannot be guaranteed of ordered delivery. Connectionless bearer services lifetime is reduced to the transport of one message.

**Connectionless (for a bearer service):** In a connectionless bearer, no connection is established beforehand between the source and the destination entities ; the source and destination network addresses need to be specified in each message. Transferred information cannot be guaranteed of ordered delivery. Connectionless bearer services lifetime is reduced to the transport of one message.

**Connectionless service:** A service which allows the transfer of information among service users without the need for end-to-end call establishment procedures (source: ITU-T I.113).

**Control channel:** A logical channel that carries system control information.

**Controlling RNC:** A role an RNC can take with respect to a specific set of UTRAN access points. There is only one Controlling RNC for any UTRAN access point. The Controlling RNC has the overall control of the logical resources of its UTRAN access point's.

**Conversational service:** An interactive service which provides for bi-directional communication by means of real-time (no store-and-forward) end-to-end information transfer from user to user (source: ITU-T I.113).

**Core network:** An architectural term relating to the part of 3GPP System which is independent of the connection technology of the terminal (eg radio, wired).

**Core Network Operator:** Operator that offers core network services.

**Corporate code:** Code which when combined with the network and SP codes refers to a unique Corporate. The code is provided in the GID2 file on the SIM (see Annex A.1.) and is correspondingly stored on the ME.

**Corporate code group** combination of the Corporate code and the associated SP and network codes.

**Corporate personalisation:** Allows a corporate customer to personalise MEs that he provides for his employees or customers use so that they can only be used with the company's own SIMs.

**Coverage area (of a mobile cellular system):** An area where mobile cellular services are provided by that mobile cellular system to the level required of that system.

**Coverage area:** Area over which a 3GPP System service is provided with the service probability above a certain threshold.

**Current directory:** The latest MF or DF selected.

**Current EF:** The latest EF selected.

**Current serving cell:** This is the cell on which the MS is camped.

## D

**Data field:** Obsolete term for Elementary File.

**Data Object:** Information coded as TLV objects, i.e. consisting of a Tag, a Length and a Value part.

**Dedicated Channel:** A channel dedicated to a specific UE.

**De-personalisation:** Is the process of deactivating the personalisation so that the ME ceases to carry out the verification checks.

**Dedicated File (DF):** A file containing access conditions and, optionally, Elementary Files (EFs) or other Dedicated Files (DFs).

**Delivered QoS:** Actual QoS parameter values with which the content was delivered over the lifetime of a QoS session.

**Demand service:** A type of telecommunication service in which the communication path is established almost immediately, in response to a user request effected by means of user-network signalling (source: ITU-T I.112).

**Dependability:** A performance criterion that describes the degree of certainty (or surety) with which a function is performed regardless of speed or accuracy, but within a given observational interval (source: ITU-T I.350).

**Destination user:** Entity to which calls to the General Packet Radio Service (GPRS) are directed.

**Directory:** General term for MF and DF.

**Directory Number:** A string consisting of one or more of the characters from the set {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, \*, #, a, b, c} associated with a nature of address indicator and number plan indicator. When using the public MMI for the control of supplementary services however, \* and # cannot be part of any SC or SI field.

NOTE 1: No such restriction on the SC and SI fields exists when using other (e.g. menu-driven) MMI for the control of supplementary services.

NOTE 2: When using the public MMI, certain limitations on the use of one and two digit directory numbers may apply. The use of other MMI can remove these restrictions.

NOTE 3: This definition is not intended to require the support of all these characters in the MMI itself.

**Distribution service:** Service characterised by the unidirectional flow of information from a given point in the network to other (multiple) locations (source: ITU-T I.113).

**Domain:** The highest-level group of physical entities. Reference points are defined between domains.

**Donor network:** The subscription network from which a number is ported in the porting process. This may or may not be the number range owner network.

**Downlink:** Unidirectional radio link for the transmission of signals from a UTRAN access point to a UE. Also in general the direction from Network to UE.

**Drift RNS:** The role an RNS can take with respect to a specific connection between a UE and UTRAN. An RNS that supports the Serving RNS with radio resources when the connection between the UTRAN and the User Equipment need to use cell(s) controlled by this RNS is referred to as Drift RNS.

## E

**Enterprise Systems:** Information Systems that are used in the telecommunication organisation but are not directly or essentially related to the telecommunications aspects (Call Centre's, Fraud Detection and Prevention Systems, Invoicing

etc).

**Element Manager:** Provides a package of end-user functions for management of a set of closely related types of network elements. These functions can be divided into two main categories.

**Element Management Functions:** Set of functions for management of network elements on an individual basis. These are basically the same functions as supported by the corresponding local terminals.

**Elementary File:** A file containing access conditions and data and no other files.

**Essential UE Requirement (Conditional):** Requirement which has to be implemented under certain Service conditions. e.g. AMR codec in UE which supports speech service

**Essential UE Requirement (Unconditional):** Requirement which has to be implemented in any 3G UE in order to exist in and communicate with 3G network (e.g. Chiprate of 3.84Mcps).

**Explicit Diversity Gain (dB):** The effective gain achieved using diversity techniques.

**Extra SDU delivery probability:** The ratio of total (unrequested) extra service data units (SDUs) to total service data units received by a destination user in a specified sample (source: ITU-T X.140).

NOTE: the term "user information unit" has been replaced by the term "service data unit".

## F

**File:** A directory or an organised set of bytes or records in the SIM.

**File identifier:** The 2 bytes, which address a file in the SIM

**Fixed Network User Rate:** The user rate between IWF and the fixed network.

**FC (Flow Control):** A set of mechanisms used to prevent the network from becoming overloaded by regulating the input rate transmissions.

**Functional group:** A set of functions that may be performed by a single equipment (source: ITU-T I.112).

## G

**Geographical routing:** The conversion of the PDU's geographical area definition, which specifies the area in which the PDU will be broadcast, into an equivalent radio coverage map.

**GERAN Radio Network Temporary Identifier (G-RNTI):** G-RNTI is an MS identifier which is allocated by the Serving BSC and is unique within this SBSC. It is allocated for all MSs having an RRC connection. The G-RNTI is always reallocated when the Serving BSC for the RRC connection is changed and deallocated when the RRC connection is released. The G-RNTI is also used at RLC/MAC during contention resolution.

**GPRS MS:** An MS capable of GPRS services is a GPRS MS.

**Group:** A set of members allowed to participate in the group call service. The group is defined by a set of rules that identifies a collection of members implicitly or explicitly. These rules may associate members for the purpose of participating in a group call, or may associate members who do not participate in data transfer but do participate in management, security, control, or accounting for the group.

**Group call:** The relationship that exists between the members of a group for the purpose of transferring data. More than one group call may exist in a group. A group call establishes an active group.

**Group call initiator:** A member (or third party) authorised to initiate a group call. More than one member may initiate group calls.

**Group call participant:** A member of a group participating in a particular group call at a given time.

**Group call server:** A logical entity that provides the group call service to the members.

**Group call service:** A PTM service in which a relationship exists between participants of the group, and in which a single data unit transmitted by a source participant is received by multiple destination participants; it is a one-in, many-out service.

**Group controller:** The member (or third party) responsible for the group creation and membership control.

**GSM/EDGE Radio Access Network:** GERAN is a conceptual term identifying that part of the network which consists of BSCs and BTSs between A/Gb or Iu and Um interfaces.

**GSM BSS:** refers in this specification to the GSM/GPRS access network.

**GSM core network:** refers in this specification to the GSM NSS and GPRS backbone infrastructure.

**GSM coverage:** an area where mobile cellular services are provided in accordance with GSM standards

**GSM session:** That part of the card session dedicated to the GSM operation.

**Guaranteed service:** A service model which provides highly reliable performance, with little or no variance in the measured performance criteria.

## H

**Handoff Gain/Loss (dB):** This is the gain/loss factor (+ or -) brought by handoff to maintain specified reliability at the cell boundary.

**Handover:** The transfer of a user's connection from one radio channel to another (can be the same or different cell).

**Handover:** The process in which the radio access network changes the radio transmitters or radio access mode or radio system used to provide the bearer services, while maintaining a defined bearer service QoS.

**Hard Handover:** Hard handover is a category of handover procedures where all the old radio links in the UE are abandoned before the new radio links are established.

**HE-VASP:** Home Environment Value Added Service Provider. This is a VASP that has an agreement with the Home Environment to provide services. The Home Environment provides services to the user in a managed way, possibly by collaborating with HE-VASPs, but this is transparent to the user. The same service could be provided by more than one HE-VASP and each HE-VASP can provide more than one service.

**Home Environment:** responsible for overall provision and control of the Personal Service Environment of its subscribers.

**Home PLMN:** PLMN where the Mobile Country Code (MCC) and Mobile Network Code (MNC) of the PLMN identity are the same as the MCC and MNC of the IMSI.

## I

**IC Card:** A card holding an Integrated Circuit containing subscriber, end user, authentication and/or application data for one or more applications.

**IC card SIM:** Obsolete term for ID-1 SIM.

**ID-1 SIM:** The SIM having the format of an ID-1 card (see ISO 7816-1 [24]).

**Idle mode:** The state of UE switched on but which does not have any established RRC connection.

**Implementation capability:** A capability that relates to a particular technical domain. Examples: a spreading factor of 128 (in the domain of the physical layer); the A5 algorithm; a 64 bit key length (in the domain of security); a power output of 21 dBm (in the domain of transmitter performance); support of AMR Codec (in the domain of the Codec); support of CHV1 (in the domain of the USIM).

**Information Data Rate:** Rate of the user information, which must be transmitted over the Air Interface. For example, output rate of the voice codec.

**Initial paging information:** This information indicates if the UE needs to continue to read more paging information and eventually receive a page message.

**Initial paging occasion:** The paging occasion the UE uses as starting point for its paging DRX cycle.

**Integrity:** (in the context of security) The avoidance of unauthorised modification of information.

**Inter-cell handover:** A handover between different cells. An inter-cell handover requires network connections to be altered.

**Inter PLMN handover:** Handover between different PLMNs, ie having different MCC-MNC.

**Inter system handover:** Handover between networks using different radiosystems , e.g. UMTS – GSM.

**Interactive service:** A service which provides the means for bi-directional exchange of information between users. Interactive services are divided into three classes of services: conversational services, messaging services and retrieval services (source: ITU-T I.113).

**Interface:** The common boundary between two associated systems (source: ITU-T I.112).

**International Mobile Station Equipment Identity (IMEI):** An "International Mobile Station Equipment Identity" is a unique number which shall be allocated to each individual mobile station equipment in the PLMN and shall be unconditionally implemented by the MS manufacturer.

**International mobile user number (IMUN):** The International Mobile User Number is a diallable number allocated to a 3GPP System user.

**Interference Signal Code Power (ISCP):** Given only interference power is received, the average power of the received signal after despreading and combining.

**Intra-cell handover:** A handover within one sector or between different sectors of the same cell. An intra-cell handover does not require network connections to be altered.

**Intra PLMN handover:** Handover within the same network, ie having the same MCC-MNC regardless of radio access system. Note: this includes the case of UMTS <math>\leftrightarrow</math> GSM handover where MCC-MNC are the same in both cases.

**IRP Information Model:** An IRP Information Model consists of an IRP Information Service and a Network Resource Model (see below for definitions of IRP Information Service and Network Resource Model).

**IRP Information Service:** An IRP Information Service describes the information flow and support objects for a certain functional area, e.g. the alarm information service in the fault management area. As an example of support objects, for the Alarm IRP there is the alarm record and alarm list.

**IRP Solution Set:** An IRP Solution Set is a mapping of the IRP Information Service to one of several technologies (CORBA/IDL, SNMP/SMI, CMIP/GDMO, etc.). An IRP Information Service can be mapped to several different IRP Solution Sets. Different technology selections may be done for different IRPs.

**Inter System Change:** a change of radio access between different radio access technologies such as GSM and UMTS.

**Iu:** Interconnection point between an RNC or a BSC and a 3G Core Network. It is also considered as a reference point.

**Iu-flex:** Routing functionality for intra domain connection of RAN nodes to multiple CN nodes.

**Iu mode:** mode of operation of the MS when connected to the Core Network via GERAN or UTRAN and the Iu interface.

**Iub:** Interface between an RNC and a Node B.

**Iur:** A logical interface between two RNC. Whilst logically representing a point to point link between RNC, the physical realisation may not be a point to point link.

## J

<void>

## K

**Key pair:** Key pairs are matching private and public keys. If a block of data is encrypted using the private key, the public key from the pair can be used to decrypt it. The private key is never divulged to any other party, but the public key is available, e.g. in a certificate.

## L

**Local Service:** Services, which are provided by current roamed to network that are not HE services. The same service can be provided by a network as a local service to inbound roamers and as a HE service to the subscribers of this network.

**Localised Service Area (LSA):** A LSA is an operator-defined group of cells, for which specific access conditions apply. This may correspond to an area in which the Core Network offers specific services. A LSA may be defined within a PLMN or globally. Therefore, a LSA may offer a non-contiguous radio coverage.

**Location Registration (LR):** The UE registers its presence in a registration area, for instance regularly or when entering a new registration area.

**Logical Channel:** A logical channel is an information stream dedicated to the transfer of a specific type of information over the radio interface. Logical Channels are provided on top of the MAC layer.

**Logical Model:** A Logical Model defines an abstract view of a network or network element by means of information objects representing network element, aggregations of network elements, the topological relationship between the elements, endpoints of connections (termination points), and transport entities (such as connections) that transport information between two or more termination points. The information objects defined in the Logical Model are used, among others, by connection management functions. In this way a physical implementation independent management is achieved.

**Logical O&M:** Logical O&M is the signalling associated with the control of logical resources (channels, cells,) owned by the RNC but physically implemented in the Node B. The RNC controls these logical resources. A number of O&M procedures physically implemented in Node B impact on the logical resources and therefore require an information exchange between RNC and Node B. All messages needed to support this information exchange are classified as Logical O&M forming an integral part of NBAP.

**LSA exclusive access cell:** A UE may only camp on this cell if the cell belongs to the LSAs to which the user has subscribed. Nevertheless, if no other cells are available, the UE of non-LSA users may originate emergency calls from this cell.

**LSA only access:** When LSA only access applies to the user, the UE can only access cells that belong to the LSAs to which the user has subscribed. Outside the coverage area of the subscribed LSAs, the UE may camp on other cells and limited services apply.

**LSA preferential access cell:** A LSA preferential access cell is a cell which is part of the LSA. UEs of users that have subscribed to a LSA of a LSA-preferential-access cell have higher priority to resources than non-LSA users in the same cell.

## M

**Macro cells:** "Macro cells" are outdoor cells with a large cell radius.

**Macro diversity handover:** "Macro diversity" is a operation state in which a User Equipment simultaneously has radio links with two or more UTRAN access points for the sole aim of improving quality of the radio connection or providing seamless.

**Management Infrastructure:** The collection of systems (computers and telecommunications) a 3GPP System Organisation has in order to manage a 3GPP System.

**Mandatory UE Requirement:** Regulatory requirement which is applicable to 3G UEs. It is determined by each country/region and beyond the scope of 3GPP specification (e.g. spurious emission in UK).

**Master File (MF):** The unique mandatory file containing access conditions and optionally DFs and/or EFs.

**Maximum output Power:** For UE, this is a measure of the maximum power supported by the UE (i.e. the actual power as would be measured assuming no measurement error) (TS 25.101). For FDD BS, the mean power level per carrier of the base station measured at the antenna connector in a specified reference condition (TS 25.104). For TDD BS this refers to the measure of power when averaged over the transmit timeslot at the maximum power setting (TS 25.105).

**Maximum possible AIUR:** The highest possible AIUR that the multiple TCH/F can provide, e.g. 2 TCH/F using TCH/F9.6 provides a maximum possible AIUR of 19,2 kbit/s.

**Maximum Transmitter Power Per Traffic Channel (dBm):** The maximum power at the transmitter output for a single traffic channel.

**Mean bit rate:** A measure of throughput. The average (mean) bit rate available to the user for the given period of time (source: ITU-T I.210).

**Mean transit delay:** The average transit delay experienced by a (typically) large sample of PDUs within the same service category.

**Medium Access Control:** A sub-layer of radio interface layer 2 providing unacknowledged data transfer service on logical channels and access to transport channels.

**Messaging service:** An interactive service which offers user-to-user communication between individual users via storage units with store-and-forward, mailbox and/or message handling, (e.g., information editing, processing and conversion) functions (source: ITU-T I.113).

**MExE Classmark:** A MExE classmark identifies a category of MExE UE supporting MExE functionality with a minimum level of processing, memory, display, and interactive capabilities. Several MExE classmarks may be defined to differentiate between the functionalities offered by different MExE UEs. A MExE application or applet defined as being of a specific MExE Classmark indicates that it is supportable by a MExE UE of that Classmark.

**MExE executable:** An executable is an applet, application, or executable content, which conforms to the MExE specification and may execute on the ME.

**MExE server:** A node supporting MExE services in the MExE service environment.

**MExE service:** a service enhanced (or made possible) by MExE technology.

**MExE service environment:** Depending on the configuration of the PLMN, the operator may be able to offer support to MExE services in various ways. Examples of possible sources are from traditional GSM nodes, IN nodes, operator-specific nodes, operator franchised nodes and services provider nodes, together with access to nodes external (i.e. vendor-specific) to the PLMN depending on the nature of the MExE service. These nodes are considered to constitute the MExE service environment. The MExE service environment shall support direct MExE UE to MExE UE interaction of MExE services.

**MExE service provider:** an organisation which delivers MExE services to the subscriber. This is normally the PLMN operator, but could be an organisation with MExE responsibility (which may have been delegated by the PLMN operator).

**MExE SIM:** A SIM that is capable of storing a security certificate that is accessible using standard mechanisms.

**MExE subscriber:** The owner of a subscription who has entered into an agreement with a MExE service provider for MExE services.

**Micro cells:** "Micro cells" are small cells.

**Minimum transmit power:** The minimum controlled output power of the TDD BS is when the power control setting is set to a minimum value. This is when the power control indicates a minimum transmit output power is required (TS 25.105).

**Mobile evaluated handover:** Mobile evaluated handover (MEHO) is a type of handover triggered by an evaluation made in the mobile. The mobile evaluates the necessity of handover based on the measured radio environment and based on criteria defined by the network. When the evaluation meets the hand-off criteria the necessary information is sent from the mobile to the network. The network then decides on the necessity of the handover based on the reported



evaluation result and other conditions, e.g. uplink radio environment and/or availability of network resources, the network may then execute the handover.

**Mobile number portability:** The ability for a mobile subscriber to change subscription network within the same country whilst retaining their original MSISDN(s).

**Mobile termination:** the mobile termination is the component of the mobile station which supports functions specific to management of the radio interface (Um).

**Mobility:** The ability for the user to communicate whilst moving independent of location.

**Mobility Management:** A relation between the mobile station and the UTRAN that is used to set-up, maintain and release the various physical channels.

**Multi mode terminal:** UE that can obtain service from at least one UTRA radio access mode, and one or more different systems such as GSM bands or possibly other radio systems such as IMT-2000 family members.

**Multicast service:** A unidirectional PTM service in which a message is transmitted from a single source entity to all subscribers currently located within a geographical area. The message contains a group identifier indicating whether the message is of interest to all subscribers or to only the subset of subscribers belonging to a specific multicast group.

**Multipoint:** A value of the service attribute "communication configuration", which denotes that the communication involves more than two network terminations (source: ITU-T I.113).

**Multimedia service:** Services that handle several types of media such as audio and video in a synchronised way from the user's point of view. A multimedia service may involve multiple parties, multiple connections, and the addition or deletion of resources and users within a single communication session.

## N

**Name:** A name is an alpha numeric label used for identification of end users and may be portable.

**Negotiated QoS:** In response to a QoS request, the network shall negotiate each QoS attribute to a level that is in accordance with the available network resources. After QoS negotiation, the bearer network shall always attempt to provide adequate resources to support all of the negotiated QoS profiles.

**Network code:** MCC and MNC.

**Network code group:** Same as network code.

**Network connection:** An association established by a network layer between two users for the transfer of data, which provides explicit identification of a set of network data transmissions and agreement concerning the services to be provided by the set (source: ITU-T X.213 / ISO-IEC 8348).

**Network Element:** A discrete telecommunications entity which can be managed over a specific interface e.g. the RNC.

**Network Manager:** Provides a package of end-user functions with the responsibility for the management of a network, mainly as supported by the EM(s) but it may also involve direct access to the network elements. All communication with the network is based on open and well standardized interfaces supporting management of multi-vendor and multi-technology network elements.

**Network operator:** See PLMN operator.

**Network personalisation:** Allows the network operator to personalise a ME so that it can only be used with that particular network operator's SIMs.

**Network Resource Model:** A protocol independent model describing managed objects representing network resources, e.g. an RNC or NodeB.

**Network service data unit (NSDU):** A unit of data passed between the user and the GPRS network across a Network Service Access Point (NSAP).

**Network subset code:** digits 6 and 7 of the IMSI.

**Network subset code group:** Combination of a network subset code and the associated network code.

**Network subset personalisation:** A refinement of network personalisation, which allows network operators to limit the usage of a ME to a subset of SIMs

**Network termination:** A functional group on the network side of a user-network interface (source: ITU-T I.112).

**Node B:** A logical node responsible for radio transmission / reception in one or more cells to/from the User Equipment. Terminates the Iub interface towards the RNC.

**Nomadic Operating Mode:** Mode of operation where the terminal is transportable but being operated while stationary and may in addition require user co-operation (e.g. close to open spaces, antenna setup...).

**Nominal Maximum Output Power:** This is the nominal power defined by the UE power class.

**Non-Access Stratum:** Protocols between UE and the core network that are not terminated in the UTRAN.

**Normal GSM operation:** Relating to general, CHV related, GSM security related and subscription related procedures.

**Normal mode of operation:** The mode of operation into which the ME would have gone if it had no personalisation checks to process.

**NTDD:** Narrow TDD – the 1.28 Mcps chip rate UTRA-TDD option

**Number:** A string of decimal digits that uniquely indicates the public network termination point. The number contains the information necessary to route the call to this termination point.

A number can be in a format determined nationally or in an international format. The international format is known as the International Public Telecommunication Number which includes the country code and subsequent digits, but not the international prefix.

**Number portability:** Where the provision of diallable numbers is independent of home environment and/or serving network.

**Number range owner network:** The network to which the number range containing the ported number has been allocated.

## O

**Off-Line charging:** A charging process where charging information does not affect, in real time, the service rendered.

**On-Line Charging:** A charging process where charging information can affect, in real time, the service rendered and therefore directly interacts with the session/service control.

**One Stop Billing:** One bill for all charges incurred using the 3GPP System.

**Open group:** A group that does not have a pre-defined set of members. Any user may participate in an open group.

**Open Service Architecture:** Concept for introducing a vendor independent means for introduction of new services.

**Operations System:** This abbreviation indicates a generic management system, independent of its location level within the management hierarchy.

**Optional UE Requirement:** Any other requirements than mandatory UE requirement, essential UE requirement (conditional), essential UE requirement (unconditional). It is totally up to individual manufacturer to decide whether it should be implemented or not (e.g. Network initiated MM connection establishment).

**Originating network:** The network where the calling party is located.

**Orthogonal Channel Noise Simulator** a mechanism used to simulate the users or control signals on the other orthogonal channels of a downlink

**OSA Interface:** Standardised Interface used by application/clients to access service capability features.

## P

**Packet:** An information unit identified by a label at layer 3 of the OSI reference model (source: ITU-T I.113). A network protocol data unit (NPDU).

**Packet data protocol (PDP):** Any protocol which transmits data as discrete units known as packets, e.g., IP, or X.25.

**Packet transfer mode:** Also known as packet mode. A transfer mode in which the transmission and switching functions are achieved by packet oriented techniques, so as to dynamically share network transmission and switching resources between a multiplicity of connections (source: ITU-T I.113).

**Padding:** One or more bits appended to a message in order to cause the message to contain the required number of bits or bytes.

**Paging:** The act of seeking a User Equipment.

**Paging DRX cycle:** The individual time interval between monitoring Paging Occasion for a specific UE

**Paging Block Periodicity (PBP):** The period of the occurrence of Paging Blocks. (For FDD, PBP = 1).

**Paging Message Receiving Occasion:** The frame where the UE receives actual paging message.

**Paging occasion:** The frame where the UE monitors in FDD or the paging block, which consists of several frames, for TDD. For Paging Blocks, the value of Paging Occasion is equal to the first frame of the Paging Block.

**Peak bit rate:** A measure of throughput. The maximum bit rate offered to the user for a given time period (to be defined) for the transfer of a bursty signal (source: ITU-T I.210). (The maximum user information transfer rate achievable by a user for a single service data unit transfer.)

**Performance:** The ability to track service and resource usage levels and to provide feedback on the responsiveness and reliability of the network.

**Personal Service Environment:** contains personalised information defining how subscribed services are provided and presented towards the user. Each subscriber of the Home Environment has her own Personal Service Environment. The Personal Service Environment is defined in terms of one or more User Profiles.

**Personalisation:** The process of storing information in the ME and activating the procedures which verify this information against the corresponding information stored in the SIM whenever the ME is powered up or a SIM is inserted, in order to limit the SIMs with which the ME will operate.

**Personalisation entity:** Network, network subset, SP, Corporate or SIM to which the ME is personalised

**Phonebook:** A dataset of personal or entity attributes. The simplest form is a set of name-subscriber pairs as supported by GSM SIMs.

**Physical channel data stream:** In the uplink, a data stream that is transmitted on one physical channel. In the downlink, a data stream that is transmitted on one physical channel in each cell of the active set.

**Physical Channel:** In FDD mode, a physical channel is defined by code, frequency and, in the uplink, relative phase (I/Q). In TDD mode, a physical channel is defined by code, frequency, and time-slot.

**Pico cells:** "Pico cells" are cells, mainly indoor cells, with a radius typically less than 50 metres.

**PICH Monitoring Occasion:** The time instance where the UE monitors PICH within Paging Occasion.

**PLMN Area:** The PLMN area is the geographical area in which a PLMN provides communication services according to the specifications to mobile users. In the PLMN area, the mobile user can set up calls to a user of a terminating network. The terminating network may be a fixed network, the same PLMN, another PLMN or other types of PLMN. Terminating network users can also set up calls to the PLMN. The PLMN area is allocated to a PLMN. It is determined by the service and network provider in accordance with any provisions laid down under national law. In general the PLMN area is restricted to one country. It can also be determined differently, depending on the different telecommunication services, or type of MS. If there are several PLMNs in one country, their PLMN areas may overlap. In border areas, the PLMN areas of different countries may overlap. Administrations will have to take precautions to ensure that cross border coverage is minimised in adjacent countries unless otherwise agreed.

**PLMN Operator:** Public Land Mobile Network operator. The entity which offers telecommunications services over an air interface..

**Plug-in SIM:** A Second format of SIM (specified in clause 4).

**point-to-multipoint service:** A service type in which data is sent to "all service subscribers or a pre-defined subset of all subscribers" within an area defined by the Service Requester.

**Point-to-point:** A value of the service attribute "communication configuration", which denotes that the communication involves only two network terminations.

**Point-to-point service:** A service type in which data is sent from a single network termination to another network termination.

**Ported number:** A MSISDN that has undergone the porting process.

**Ported subscriber:** The subscriber of a ported number.

**Porting process:** A description of the transfer of a number between network operators.

**Power control dynamic range:** The difference between the maximum and the minimum total transmit output power for a specified reference condition (TS 25.104).

**Predictive service:** A service model which provides reliable performance, but allowing a specified variance in the measured performance criteria.

**Prepay billing:** Billing arrangement between customer and operator/service provider where the customer deposits an amount of money in advance, which is subsequently used to pay for service usage.

**Postpay billing:** Billing arrangement between customer and operator/service provider where the customer periodically receives a bill for service usage in the past period.

**Proactive SIM:** A SIM, which is capable of issuing commands to the Terminal. Part of SIM Application Toolkit (see clause 11).

**Protocol:** A formal set of procedures that are adopted to ensure communication between two or more functions within the within the same layer of a hierarchy of functions (source: ITU-T I.112).

**Protocol data unit:** In the reference model for OSI, a unit of data specified in an (N)-protocol layer and consisting of (N)-protocol control information and possibly (N)-user data (source: ITU-T X.200 / ISO-IEC 7498-1).

**Public land mobile network:** A telecommunications network providing mobile cellular services.

## Q

**QoS profile:** a QoS profile comprises a number of QoS parameters. A QoS profile is associated with each QoS session. The QoS profile defines the performance expectations placed on the bearer network.

**QoS session:** Lifetime of PDP context. The period between the opening and closing of a network connection whose characteristics are defined by a QoS profile. Multiple QoS sessions may exist, each with a different QoS profile.

**Quality of Service:** The collective effect of service performances which determine the degree of satisfaction of a user of a service. It is characterised by the combined aspects of performance factors applicable to all services, such as;

- service operability performance;
- service accessibility performance;
- service retainability performance;
- service integrity performance; and
- other factors specific to each service.

## R

**Radio access bearer:** The service that the access stratum provides to the non-access stratum for transfer of user data between User Equipment and CN.

**Radio Access Mode:** Mode of the cell, FDD or TDD.

**RAN sharing:** Two or more CN operators share the same RAN, i.e. a RAN node (RNC or BSC) is connected to multiple CN nodes (SGSNs and MSC/VLRs) belonging to different CN operators.

**Radio Access Network Application Part:** Radio Network Signalling over the Iu.

**Radio Access Network Operator:** Operator that offers radio access to one or more core network operators.

**Radio Access Technology:** UTRA, GERAN etc.

**Radio Bearer:** The service provided by the Layer 2 for transfer of user data between User Equipment and UTRAN.

**Radio frame:** A radio frame is a numbered time interval of 10 ms duration used for data transmission on the radio physical channel. A radio frame is divided into 15 time slots of 0.666 ms duration. The unit of data that is mapped to a radio frame (10 ms time interval) may also be referred to as radio frame.

**Radio interface:** The "radio interface" is the tetherless interface between User Equipment and a UTRAN access point. This term encompasses all the functionality required to maintain such interfaces.

**Radio link:** A "radio link" is a logical association between single User Equipment and a single UTRAN access point. Its physical realisation comprises one or more radio bearer transmissions.

**Radio link addition:** The procedure where a new radio link is added to the active set.

**Radio Link Control:** A sublayer of radio interface layer 2 providing transparent, unacknowledged and acknowledged data transfer service.

**Radio link removal:** The procedure where a radio link is removed from the active set.

**Radio Link Set:** A set of one or more Radio Links that has a common generation of Transmit Power Control (TPC) commands in the DL

**Radio Network Controller:** This equipment in the RNS is in charge of controlling the use and the integrity of the radio resources.

**Radio Network Subsystem Application Part:** Radio Network Signalling over the Iur.

**Radio Network Subsystem:** Either a full network or only the access part of a UTRAN offering the allocation and the release of specific radio resources to establish means of connection in between an UE and the UTRAN. A Radio Network Subsystem is responsible for the resources and transmission/reception in a set of cells.

**Radio Network Temporary Identifier:** A Radio Network Temporary Identifier is a generic term of an identifier for a UE when an RRC connection exists. Following types of RNTI are defined: Cell RNTI (C-RNTI), Serving RNC RNTI (S-RNTI), UTRAN RNTI (U-RNTI) and GERAN RNTI (G-RNTI).

**Radio Resource Control:** A sublayer of radio interface Layer 3 existing in the control plane only which provides information transfer service to the non-access stratum. RRC is responsible for controlling the configuration of radio interface Layers 1 and 2.

**Radio system:** the selected 2<sup>nd</sup> or 3<sup>rd</sup> generation radio access technology, eg UTRAN or GERAN.

**Rated Output Power:** For FDD BS, rated output power is the mean power level per carrier that the manufacturer has declared to be available at the antenna connector. For TDD BS rated output power is the mean power level per carrier over an active timeslot that the manufacturer has declared to be available at the antenna connector.

**Real time:** Time, typically in number of seconds, to perform the on-line mechanism used for fraud control and cost control.

**Received Signal Code Power:** Given only signal power is received, the average power of the received signal after

despreading and combining.

**Receiver Antenna Gain (dBi):** The maximum gain of the receiver antenna in the horizontal plane (specified as dB relative to an isotropic radiator).

**Receiver Noise Figure (dB):** Receiver noise figure is the noise figure of the receiving system referenced to the receiver input.

**Receiver Sensitivity (dBm):** This is the signal level needed at the receiver input that just satisfies the required  $E_b/(N_0+I_0)$ .

**Recipient network:** The network which receives the number in the porting process. This network becomes the subscription network when the porting process is complete.

**Record:** A string of bytes within an EF handled as a single entity (see clause 6).

**Record number:** The number, which identifies a record within an EF.

**Record pointer:** The pointer, which addresses one record in an EF.

**Reference configuration:** A combination of functional groups and reference points that shows possible network arrangements (source: ITU-T I.112).

**Reference point:** A conceptual point at the conjunction of two non-overlapping functional groups (source: ITU-T I.112).

**Regionally Provided Service:** A service entitlement to only certain geographical part(s) of a PLMN, as controlled by the network operator.

**Registration:** This is the process of camping on a cell of the PLMN and doing any necessary LRs.

**Registered PLMN (RPLMN):** This is the PLMN on which the UE has performed a location registration successfully.

**Registration Area:** A (NAS) registration area is an area in which the UE may roam without a need to perform location registration, which is a NAS procedure.

**Relay:** Terminal devices capable of ODMA relay communications.

**Relay/Seed Gateway:** Relay or Seed that communicates with the UTRAN, in either TDD or FDD mode.

**Relaylink:** Relaylink is a communications link between two ODMA relay nodes.

**Release 99:** A particular version of the 3GPP System standards produced by the 3GPP project. Also: Release 4, Release 5, Release 6 etc..

**Repeater:** A "repeater" is a radio transceiver used to extend the transmission of a base station beyond its normal range.

**Requested QoS:** a QoS profile is requested at the beginning of a QoS session. QoS modification requests are also possible during the lifetime of a QoS session.

**Required  $E_b/(N_0+I_0)$  (dB):** The ratio between the received energy per information bit to the total effective noise and interference power density needed to satisfy the quality objectives.

**Residual error rate:** A parameter describing service accuracy. The frequency of lost SDUs, and of corrupted or duplicated network SDUs delivered at the user-network interface.

**Retrieval service:** An interactive service which provides the capability of accessing information stored in data base centres. The information will be sent to the user on demand only. The information is retrieved on an individual basis, i.e., the time at which an information sequence is to start is under the control of the user (source ITU-T I.113).

**Roaming:** The ability for a user to function in a serving network different from the home network. The serving network could be a shared network operated by two or more network operator.

**Root directory:** Obsolete term for Master File.

**Root Relay:** ODMA relay node where communications originate or terminate.

**RRC Connection:** A point-to-point bi-directional connection between RRC peer entities on the UE and the UTRAN sides, respectively. An UE has either zero or one RRC connection.

## S

**SDU error probability:** The ratio of total incorrect service data units (SDUs) to total successfully transferred service data units plus incorrect service data units in a specified sample (source: ITU-T X.140).

NOTE: the source document term "user information unit" has been replaced by the term "service data unit".

**SDU loss probability:** The ratio of total lost service data units (SDUs) to total transmitted service data units in a specified sample (source: ITU-T X.140).

NOTE: the source document term "user information unit" has been replaced by the term "service data unit".

**SDU misdelivery probability:** The ratio of total misdelivered service data units (SDUs) to total service data units transferred between a specified source and destination user in a specified sample (source: ITU-T X.140).

NOTE: the source document term "user information unit" has been replaced by the term "service data unit".

**SDU transfer delay:** The value of elapsed time between the start of transfer and successful transfer of a specified service data unit (SDU) (source: ITU-T X.140).

NOTE: the source document term "user information unit" has been replaced by the term "service data unit".

**SDU transfer rate:** The total number of successfully transferred service data units (SDUs) in a transfer sample divided by the input/output time for that sample. The input/output time is the larger of the input time or the output time for the sample (source: ITU-T X.140).

NOTE: the source document term "user information unit" has been replaced by the term "service data unit".

**Seamless handover:** "Seamless handover" is a handover without perceptible interruption of the radio connection.

**Sector:** A "sector" is a sub-area of a cell. All sectors within one cell are served by the same base station. A radio link within a sector can be identified by a single logical identification belonging to that sector.

**Security:** The ability to prevent fraud as well as the protection of information availability, integrity and confidentiality.

**Seed:** Deployed ODMA relay node with or without a display/keypad.

**Selected PLMN:** This is the PLMN that has been selected by the non-access stratum, either manually or automatically.

**Service:** a component of the portfolio of choices offered by service providers to a user, a functionality offered to a user.

**Service-less UE:** A UE that has only the Baseline capabilities.

**Service Access Point:** A conceptual point where a protocol layer offers access to its services to upper layer.

**Service Area:** The Service Area is defined in the same way as the Service Area according to ITU-T Recommendation Q.1001 [4]. In contrast to the PLMN area it is not based on the coverage of a PLMN. Instead it is based on the area in which a fixed network user can call a mobile user without knowing his location. The Service Area can therefore change when the signalling system is being extended, for example.

**Service attribute:** A specified characteristic of a telecommunication service (source: ITU-T I.112).

NOTE: the value(s) assigned to one or more service attributes may be used to distinguish that telecommunications service from others.

**Service bit rate:** The bit rate that is available to a user for the transfer of user information (source: ITU-T I.113).

**Service Capabilities:** Bearers defined by parameters, and/or mechanisms needed to realise services. These are within networks and under network control.

**Service Capability Feature:** Functionality offered by service capabilities that are accessible via the standardised application interface

**Service Capability Server:** Network functionality providing open interfaces towards the functionality offered by 3GPP System service capabilities.

**Service category or service class:** A service offered to the users described by a set of performance parameters and their specified values, limits or ranges. The set of parameters provides a comprehensive description of the service capability.

**Service Control:** The ability of the user, home environment or serving environment to determine what a particular service does, for a specific invocation of that service, within the limitations of that service.

**Service Data Unit (SDU):** In the reference model for OSI, an amount of information whose identity is preserved when transferred between peer (N+1)-layer entities and which is not interpreted by the supporting (N)-layer entities (source: ITU-T X.200 / ISO-IEC 7498-1).

**Service delay:** The time elapsed from the invocation of the service request, to the corresponding service request indication at the Service Receiver, indicating the arrival of application data.

**Service Enabler:** a capability which may be used, either by itself or in conjunction with other service enablers, to provide a service to the end user.

**Service Execution Environment:** A platform on which an application or programme is authorised to perform a number of functionalities; examples of service execution environments are the user equipment, integrated circuit card and a network platform or any other server.

**Service Feature:** Functionality that a 3GPP System shall offer to enable provision of services. Services, are made up of different service features.

**Service Implementation Capabilities:** Set of implementation capabilities, in each technical domain, required to enable a UE to support a set of UE Service Capabilities.

**Service model:** A general characterisation of services based upon a QoS paradigm, without specifying the actual performance targets.

**Service Provider:** A Service Provider is either a network operator or an other entity that provides services to a subscriber (e.g. a MVNO)

**Service receiver:** The entity which receives the service request indication primitive, containing the SDU.

**Service relationship:** The association between two or more entities engaged in the provision of services.

**Service request:** This is defined as being one invocation of the service through a service request primitive.

**Service requester:** The entity which requests the initiation of a GPRS operation, through a service request.

**Service subscriber:** Entity which subscribes to the General Packet Radio Service (GPRS) service.

**Services (of a mobile cellular system):** The set of functions that the mobile cellular system can make available to the user.

**Serving BSS:** A role a BSS can take with respect to a specific connection between an MS and GERAN. There is one Serving BSS for each MS that has a connection to GERAN. The Serving BSS is in charge of the RRC connection between an MS and the GERAN. The Serving BSS terminates the Iu for this connection.

**Serving Network:** The serving network provides the user with access to the services of home environment.

**Serving RNS:** A role an RNS can take with respect to a specific connection between an UE and UTRAN. There is one Serving RNS for each UE that has a connection to UTRAN. The Serving RNS is in charge of the RRC connection between a UE and the UTRAN. The Serving RNS terminates the Iu for this connection.

**Settlement:** Payment of amounts resulting from the accounting process.

**Shared Channel:** A radio resource (transport channel or physical channel) that can be shared dynamically between several UEs.

**Shared Network:** When two or more network operator sharing network elements.



**Short time:** Time, typically in number of minutes, to perform the off-line mechanism used for accounting.

**Signalling:** The exchange of information specifically concerned with the establishment and control of connections, and with management, in a telecommunications network (source: ITU-T I.112).

**Signalling connection:** An acknowledged-mode link between the user equipment and the core network to transfer higher layer information between the entities in the non-access stratum.

**Signalling link:** Provides an acknowledged-mode link layer to transfer the UE-UTRAN signalling messages as well as UE - Core Network signalling messages (using the signalling connection).

**SIM application toolkit procedures:** Defined in GSM 11.14 [27].

**SIM code:** Code which when combined with the network and NS codes refers to a unique SIM. The code is provided by the digits 8 to 15 of the IMSI

**SIM code group:** Combination of the SIM code and the associated network subset and network codes (it is equivalent to the IMSI).

**SIM personalisation:** Enables a user to personalise a ME so that it may only be used with particular SIM(s).

**Simultaneous use of services:** The concurrent use of a circuit-mode service (voice or data) and packet-mode services (GPRS) by a single mobile station.

**Soft Handover:** Soft handover is a category of handover procedures where the radio links are added and abandoned in such manner that the UE always keeps at least one radio link to the UTRAN.

**SP code:** code which when combined with the network code refers to a unique SP. The code is provided in the GID1 file on the SIM (see Annex A.1.) and is correspondingly stored on the ME.

**SP code group:** Combination of the SP code and the associated network code.

**SP personalisation:** Allows the service provider to personalise a ME so that it can only be used with that particular service provider's SIMs.

**Speed:** A performance criterion that describes the time interval required to perform a function or the rate at which the function is performed. (The function may or may not be performed with the desired accuracy.) (source: ITU-T I.350).

**SRNC Radio Network Temporary Identifier (S-RNTI):** S-RNTI is UE identifier which is allocated by the Serving RNC and unique within this SRNC. It is allocated for all UEs having a RRC connection. S-RNTI is reallocated always when the Serving RNC for the RRC connection is changed and deallocated when the RRC connection is released.

**SRNS Relocation:** The change of Iu instance and transfer of the SRNS role to another RNS.

**Stratum:** Grouping of protocols related to one aspect of the services provided by one or several domains.

**Sub Network Management Functions:** Set of functions that are related to a network model for a set of network elements constituting a clearly defined sub-network, which may include relations between the network elements. This model enables additional functions on the sub-network level (typically in the areas of network topology presentation, alarm correlation, service impact analysis and circuit provisioning).

**Subscribed QoS:** The network will not grant a QoS greater than the subscribed. The QoS profile subscription parameters are held in the HLR. An end user may have several QoS subscriptions. For security and the prevention of damage to the network, the end user cannot directly modify the QoS subscription profile data.

**Subscriber:** A Subscriber is an entity (associated with one or more users) that is engaged in a Subscription with a service provider. The subscriber is allowed to subscribe and unsubscribe services, to register a user or a list of users authorised to enjoy these services, and also to set the limits relative to the use that associated users make of these services.

**Subscription:** A subscription describes the commercial relationship between the subscriber and the service provider.

**Suitable Cell:** This is a cell on which an UE may camp. It must satisfy certain conditions.

**Supplementary service:** A service which modifies or supplements a basic telecommunication service. Consequently, it

cannot be offered to a user as a standalone service. It must be offered together with or in association with a basic telecommunication service. The same supplementary service may be common to a number of basic telecommunication services.

**System Area:** The System Area is defined as the group of PLMN areas accessible by MSs. Interworking of several PLMNs and interworking between PLMNs and fixed network(s) permit public land mobile communication services at international level.

## T

**Teleaction service:** A type of telecommunication service that uses short messages, requiring a low transmission rate, between the user and the network (source: ITU-T I.112).

**Telecommunication service:** What is offered by a PLMN operator or service provider to its customers in order to satisfy a specific telecommunication requirement. (source: ITU-T I.112). Telecommunication services are divided into two broad families: bearer services and teleservices (source: ITU-T I.210).

**Teleservice:** Is a type of telecommunication service that provides the complete capability, including terminal equipment functions, for communication between users according to standardised protocols and transmission capabilities established by agreement between operators.

**Terminal:** A device into which a UICC can be inserted and which is capable of providing access to 3GPP System services to users, either alone or in conjunction with a UICC.

**Terminal equipment:** Equipment that provides the functions necessary for the operation of the access protocols by the user. A functional group on the user side of a user-network interface (source: ITU-T I.112).

**Test environment:** A "test environment" is the combination of a test propagation environment and a deployment scenario, which together describe the parameters necessary to perform a detailed analysis of a radio transmission technology.

**Text conversation:** Real time transfer of text between users in at least two locations.

**Text Telephony:** An audiovisual conversation service providing bi-directional real time transfer of text and optionally audio between users in two locations. Audio may be transmitted alternating with text or simultaneously with text. (Source ITU-T F.703)

**Throughput:** A parameter describing service speed. The number of data bits successfully transferred in one direction between specified reference points per unit time (source: ITU-T I.113).

**Total Conversation:** An audiovisual conversation service providing bi-directional symmetric real-time transfer of motion video, text and voice between users in two or more locations. (source ITU-T F.703)

**Total power dynamic range:** The difference between the maximum and the minimum total transmit output power for a specified reference condition (TS25.104).

**Traffic channel:** A "traffic channel" is a logical channel which carries user information.

**Transit delay:** A parameter describing service speed. The time difference between the instant at which the first bit of a protocol data unit (PDU) crosses one designated boundary (reference point), and the instant at which the last bit of the PDU crosses a second designated boundary (source: ITU-T I.113).

**Transmission Time Interval:** Transmission Time Interval is defined as the inter-arrival time of Transport Block Sets, i.e. the time it shall take to transmit a Transport Block Set.

**Transmitter Antenna Gain (dBi):** The maximum gain of the transmitter antenna in the horizontal plane (specified as dB relative to an isotropic radiator).

**Transport Block:** Transport Block is defined as the basic data unit exchanged between L1 and MAC. An equivalent term for Transport Block is "MAC PDU".

**Transport Block Set:** Transport Block Set is defined as a set of Transport Blocks that is exchanged between L1 and MAC at the same time instance using the same transport channel. An equivalent term for Transport Block Set is "MAC

PDU Set”.

**Transport Block Set Size:** Transport Block Set Size is defined as the number of bits in a Transport Block Set.

**Transport Block Size:** Transport Block Size is defined as the size (number of bits) of a Transport Block.

**Transport channel:** The channels offered by the physical layer to Layer 2 for data transport between peer L1 entities are denoted as Transport Channels. Different types of transport channels are defined by how and with which characteristics data is transferred on the physical layer, e.g. whether using dedicated or common physical channels.

**Transport Format:** A Transport Format is defined as a format offered by L1 to MAC for the delivery of a Transport Block Set during a Transmission Time Interval on a Transport Channel. The Transport Format constitutes of two parts – one dynamic part and one semi-static part.

**Transport Format Combination:** A Transport Format Combination is defined as the combination of currently valid Transport Formats on all Transport Channels of an UE, i.e. containing one Transport Format from each Transport Channel.

**Transport Format Combination Set:** A Transport Format Combination Set is defined as a set of Transport Format Combinations to be used by an UE.

**Transport Format Combination Indicator (TFCI):** A Transport Format Combination Indicator is a representation of the current Transport Format Combination.

**Transport Format Identification (TFI):** A label for a specific Transport Format within a Transport Format Set.

**Transport Format Set:** A set of Transport Formats. For example, a variable rate DCH has a Transport Format Set (one Transport Format for each rate), whereas a fixed rate DCH has a single Transport Format.

## U

**UE Service Capabilities:** Capabilities that can be used either singly or in combination to deliver services to the user. The characteristic of UE Service Capabilities is that their logical function can be defined in a way that is independent of the implementation of the 3GPP System (although all UE Service Capabilities are of course constrained by the implementation of the 3GPP System). Examples: a data bearer of 144 kbps; a high quality speech teleservice; an IP teleservice; a capability to forward a speech call.

**Universal Integrated Circuit Card (UICC):** a physically secure device, an IC card (or 'smart card'), that can be inserted and removed from the terminal equipment. It may contain one or more applications. One of the applications may be a USIM.

**Universal Subscriber Identity Module (USIM):** An application residing on the UICC used for accessing services provided by mobile networks, which the application is able to register on with the appropriate security.

**Universal Terrestrial Radio Access Network:** UTRAN is a conceptual term identifying that part of the network which consists of RNCs and Node Bs between Iu and Uu interfaces.

**UPC (Usage Parameter Control):** Set of actions taken by the network to monitor and control the offered traffic and the validity of the connection with respect to the traffic contract negotiated between the user and the network.

**Uplink:** An "uplink" is a unidirectional radio link for the transmission of signals from a UE to a base station, from a Mobile Station to a mobile base station or from a mobile base station to a base station.

**URA updating:** URA updating is a family of procedures that updates the UTRAN registration area of a UE when a RRC connection exists and the position of the UE is known on URA level in the UTRAN.

**User:** An entity, not part of the 3GPP System, which uses 3GPP System services. Example: a person using a 3GPP System mobile station as a portable telephone.

**User-network interface:** The interface between the terminal equipment and a network termination at which interface the access protocols apply (source: ITU-T I.112).

**User-user protocol:** A protocol that is adopted between two or more users in order to ensure communication between

them (source: ITU-T I.112).

**User access or user network access:** The means by which a user is connected to a telecommunication network in order to use the services and/or facilities of that network (source: ITU-T I.112).

**User Equipment:** A device allowing a user access to network services. For the purpose of 3GPP specifications the interface between the UE and the network is the radio interface. A User Equipment can be subdivided into a number of domains, the domains being separated by reference points. Currently defined domains are the USIM and ME Domains. The ME Domain can further be subdivided into several components showing the connectivity between multiple functional groups. These groups can be implemented in one or more hardware devices. An example of such a connectivity is the TE – MT interface. Further, an occurrence of a User Equipment is an MS for GSM as defined in GSM TS 04.02.

**User Interface Profile:** Contains information to present the personalised user interface within the capabilities of the terminal and serving network.

**User Services Profile:** Contains identification of subscriber services, their status and reference to service preferences.

**UTRA Radio access mode:** the selected UTRA radio access mode ie UTRA-FDD;UTRA-TDD.

**UTRA-NTDD:** Time Division Duplex UTRA access mode 1.28 Mcps option

**UTRA-TDD:**Time Division Duplex UTRA Radio access mode (Includes UTRA-NTDD and UTRA-WTDD)

**UTRA-WTDD:** Time Division Duplex UTRA access mode 3.84 Mcps option

**UTRAN access point:** A conceptual point within the UTRAN performing radio transmission and reception. A UTRAN access point is associated with one specific cell, i.e. there exists one UTRAN access point for each cell. It is the UTRAN-side end point of a radio link.

**UTRAN Registration Area:** The UTRAN Registration Area is an area covered by a number of cells. The URA is only internally known in the UTRAN.

**UTRAN Radio Network Temporary Identifier:** The U-RNTI is a unique UE identifier that consists of two parts, an SRNC identifier and a C-RNTI. U-RNTI is allocated to an UE having a RRC connection. It identifies the UE within UTRAN and is used as an UE identifier in cell update, URA update, RRC connection reestablishment and (UTRAN originated) paging messages and associated responses on the radio interface.

**User Profile:** Is the set of information necessary to provide a user with a consistent, personalised service environment, irrespective of the user's location or the terminal used (within the limitations of the terminal and the serving network).

**Uu:** The Radio interface between UTRAN and the User Equipment.

## V

**Value Added Service Provider:** Provides services other than basic telecommunications service for which additional charges may be incurred.

**Variable bit rate service:** A type of telecommunication service characterised by a service bit rate specified by statistically expressed parameters which allow the bit rate to vary within defined limits (source: ITU-T I.113).

**Virtual Home Environment:** A concept for personal service environment portability across network boundaries and between terminals.

**Visited PLMN of home country:** This is a PLMN, different from the home PLMN, where the MCC part of the PLMN identity is the same as the MCC of the IMSI.

## W

**WTDD:** Wide TDD – the 3.84 Mcps chip rate UTRA-TDD option.

X

&lt;void&gt;

Y

&lt;void&gt;

Z

&lt;void&gt;

## 4 Abbreviations

### 0-9

2G	2 <sup>nd</sup> Generation
3G	3 <sup>rd</sup> Generation
3GPP	Third Generation Partnership Project
8-PSK	8-state Phase Shift Keying

### A

A-SGW	Access Signalling Gateway
A3	Authentication algorithm A3
A38	A single algorithm performing the functions of A3 and A8
A5/1	Encryption algorithm A5/1
A5/2	Encryption algorithm A5/2
A5/X	Encryption algorithm A5/0-7
A8	Ciphering key generating algorithm A8
AAL	ATM Adaptation Layer
AAL2	ATM Adaptation Layer type 2
AAL5	ATM Adaptation Layer type 5
AB	Access Burst
AC	Access Class (C0 to C15)
	Access Condition
	Application Context
	Authentication Centre
ACC	Automatic Congestion Control
ACCH	Associated Control Channel
ACIR	Adjacent Channel Interference Ratio
ACK	Acknowledgement
ACLR	Adjacent Channel Leakage Power Ratio
ACM	Accumulated Call Meter
	Address Complete Message
ACS	Adjacent Channel Selectivity
ACU	Antenna Combining Unit
ADC	Administration Centre
	Analogue to Digital Converter
ADF	Application Dedicated File
ADM	Access condition to an EF which is under the control of the authority which creates this file
ADN	Abbreviated Dialling Numbers
ADPCM	Adaptive Differential Pulse Code Modulation

AE	Application Entity
AEC	Acoustic Echo Control
AEF	Additional Elementary Functions
AESA	ATM End System Address
AFC	Automatic Frequency Control
AGCH	Access Grant CHannel
Ai	Action indicator
AI	Acquisition Indicator
AICH	Acquisition Indicator Channel
AID	Application IDentifier
AIUR	Air Interface User Rate
AK	Anonymity key
ALCAP	Access Link Control Application Protocol
ALSI	Application Level Subscriber Identity
ALW	ALWays
AM	Acknowledged Mode
AMF	Authentication Management Field
AMR	Adaptive Multi Rate
AMR-WB	Adaptive Multi Rate Wide Band
AN	Access Network
A AoC	Advice of Charge
AoCC	Advice of Charge Charging
AoCI	Advice of Charge Information
AP	Access preamble
APDU	Application Protocol Data Unit
API	Application Programming Interface
APN	Access Point Name
ARFCN	Absolute Radio Frequency Channel Number
ARP	Address Resolution Protocol
ARQ	Automatic Repeat Request
AS	Access Stratum
ASC	Access Service Class
ASCI	Advanced Speech Call Items
ASE	Application Service Element
ASN.1	Abstract Syntax Notation One
AT command	ATtention Command
ATM	Asynchronous Transfer Mode
ATR	Answer To Reset
ATT (flag)	Attach
AU	Access Unit
AuC	Authentication Centre
AUT(H)	Authentication
AUTN	Authentication token
AWGN	Additive White Gaussian Noise

## B

B-ISDN	Broadband ISDN
BA	BCCH Allocation
BAIC	Barring of All Incoming Calls supplementary service
BAOC	Barring of All Outgoing Calls supplementary service
BCC	Base Transceiver Station (BTS) Colour Code
BCCH	Broadcast Control Channel
BCF	Base station Control Function
BCFE	Broadcast Control Functional Entity
BCH	Broadcast Channel
BCIE	Bearer Capability Information Element
BER	Bit Error Ratio
BFI	Bad Frame Indication

BG	Border Gateway
BGT	Block Guard Time
BI	all Barring of Incoming call
BIC	Baseline Implementation Capabilities
BIC-Roam	Barring of Incoming Calls when Roaming outside the home PLMN country
BID	Binding Identity
BLER	Block Error Ratio
Bm	Full-rate traffic channel
BMC	Broadcast/Multicast Control
BN	Bit Number
BO	all Barring of Outgoing call
BOC	Bell Operating Company
BOIC	Barring of Outgoing International Calls
BOIC-exHC	Barring of Outgoing International Calls except those directed to the Home PLMN Country
BPSK	Binary Phase Shift Keying
BS	Base Station
	Basic Service (group)
	Bearer Service
BSG	Basic Service Group
BSC	Base Station Controller
BSIC	Base transceiver Station Identity Code
BSIC-NCELL	BSIC of an adjacent cell
BSS	Base Station Subsystem
BSSAP	Base Station Subsystem Application Part
BSSGP	Base Station Subsystem GPRS Protocol
BSSMAP	Base Station Subsystem Management Application Part
BSSOMAP	Base Station Subsystem Operation and Maintenance Application Part
BTFD	Blind Transport Format Detection
BTS	Base Transceiver Station
BVC	BSS GPRS Protocol Virtual Connection
BVCI	BSS GPRS Protocol Virtual Connection Identifier
BWT	Block Waiting Time

## C

C	Conditional
C-	Control-
C-APDU	Command APDU
C-RNTI	Cell Radio Network Temporary Identity
C-TPDU	Command TPDU
CA	Capacity Allocation
	Cell Allocation
	Certification Authority
CAA	Capacity Allocation Acknowledgement
CAI	Charge Advice Information
CAMEL	Customised Application for Mobile network Enhanced Logic
CAP	CAMEL Application Part
CB	Cell Broadcast
CBC	Cell Broadcast Centre
CBCH	Cell Broadcast CHannel
CBMI	Cell Broadcast Message Identifier
CBR	Constant Bit Rate
CBS	Cell Broadcast Service
CC	Call Control
	Country Code
CC/PP	Composite Capability/Preference Profiles
CCBS	Completion of Calls to Busy Subscriber
CCCH	Common Control Channel
CCF	Call Control Function
CCH	Control Channel

CCITT	Comité Consultatif International Télégraphique et Téléphonique (The International Telegraph and Telephone Consultative Committee)
CCK	Corporate Control Key
CCM	Certificate Configuration Message
	Current Call Meter
CCP	Capability/Configuration Parameter
CCPCH	Common Control Physical Channel
Cct	Circuit
CCTrCH	Coded Composite Transport Channel
CD	Capacity Deallocation
	Collision Detection
CDA	Capacity Deallocation Acknowledgement
CDMA	Code Division Multiple Access
CDR	Charging Data Record
CDUR	Chargeable DURATION
CED	called station identifier
CEIR	Central Equipment Identity Register
CEND	end of charge point
CEPT	Conférence des administrations Européennes des Postes et Telecommunications
CF	Conversion Facility
	all Call Forwarding services
CFB	Call Forwarding on mobile subscriber Busy
CFN	Connection Frame Number
CFNRc	Call Forwarding on mobile subscriber Not Reachable supplementary service
CFNRy	Call Forwarding on No Reply supplementary service
CFU	Call Forwarding Unconditional
CGI	Common Gateway Interface
	Cell Global Identifier
CHAP	Challenge Handshake Authentication Protocol
CHP	CHarging Point
CHV	Card Holder Verification information
CI	Cell Identity
	CUG index
CIM	Common Information Model
CIR	Carrier to Interference Ratio
CKSN	Ciphering Key Sequence Number
CLA	CLAss
CLI	Calling Line Identity
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CLK	Clock
CM	Connection Management
CMD	Command
CMIP	Common Management Information Protocol
CMISE	Common Management Information Service
CMM	Channel Mode Modify
CN	Core Network
	Comfort Noise
CNAP	Calling Name Presentation
CNG	Calling Tone
CNL	Co-operative Network List
CLNP	Connectionless network protocol
CLNS	Connectionless network service
COLI	COnnected Line Identity
COLP	COnnected Line identification Presentation
COLR	COnnected Line identification Restriction
COM	COMplete
CONNACK	Connect Acknowledgement
CONS	Connection-oriented network service
CORBA	Common Object Request Broker Architecture



CP-Admin	Certificate Present (in the MExE SIM)-Administrator
CP-TP	Certificate Present (in the MExE SIM)-Third Party
CPICH	Common Pilot Channel
CPCH	Common Packet Channel
CPCS	Common Part Convergence Sublayer
CPS	Common Part Sublayer
CPU	Central Processing Unit
C/R	Command/Response field bit
CRC	Cyclic Redundancy Check
CRE	Call Re-establishment procedure
CRNC	Controlling Radio Network Controller
CS-GW	Circuit Switched Gateway
CS	Circuit Switched
	Coding Scheme
CSCF	Call Server Control Function
CSD	Circuit Switched Data
CSE	Camel Service Environment
CSPDN	Circuit Switched Public Data Network
CT	Call Transfer supplementary service
	Channel Tester
	Channel Type
CTCH	Common Traffic Channel
CTDMA	Code Time Division Multiple Access
CTM	Cellular Text telephone Modem
CTR	Common Technical Regulation
CTS	Cordless Telephony System
CUG	Closed User Group
CW	Call Waiting
	Continuous Wave (unmodulated signal)
CWI	Character Waiting Integer
CWT	Character Waiting Time

## D

DAC	Digital to Analog Converter
DAD	Destination Address
DAM	DECT Authentication Module
DB	Dummy Burst
DC	Dedicated Control (SAP)
DCA	Dynamic Channel Allocation
DCCH	Dedicated Control Channel
DCE	Data Circuit terminating Equipment
DCF	Data Communication Function
DCH	Dedicated Channel
DCN	Data Communication Network
DCS1800	Digital Cellular Network at 1800MHz
DDI	Direct Dial In
DECT	Digital Enhanced Cordless Telecommunications
DET	Detach
DF	Dedicated File
DHCP	Dynamic Host Configuration Protocol
DHO	Diversity Handover
diff-serv	Differentiated services
DISC	Disconnect
DL	Data Layer
	Downlink (Forward Link)
DLCI	Data Link Connection Identifier
DLD	Data Link Discriminator
Dm	Control channel (ISDN terminology applied to mobile service)

DMR	Digital Mobile Radio
DMTF	Distributed Management Task Force
DN	Destination Network
DNIC	Data Network Identifier
DNS	Directory Name Service
DO	Data Object
DP	Dial/Dialled Pulse
DPCCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DPDCH	Dedicated Physical Data Channel
DRAC	Dynamic Resource Allocation Control
DRNC	Drift Radio Network Controller
DRNS	Drift RNS
DRX	Discontinuous Reception
DS-CDMA	Direct-Sequence Code Division Multiple Access
DSCH	Downlink Shared Channel
DSE	Data Switching Exchange
DSI	Digital Speech Interpolation
DSS1	Digital Subscriber Signalling No1
DTAP	Direct Transfer Application Part
DTCH	Dedicated Traffic Channel
DTE	Data Terminal Equipment
DTMF	Dual Tone Multiple Frequency
DTX	Discontinuous Transmission

## E

E-GGSN	Enhanced GGSN
E-HLR	Enhanced HLR
EA	External Alarms
EBSG	Elementary Basic Service Group
ECM	Error Correction Mode (facsimile)
Ec/No	Ratio of energy per modulating bit to the noise spectral density
ECSD	Enhanced CSD
ECT	Explicit Call Transfer supplementary service
ECTRA	European Committee of Telecommunications Regulatory Affairs
EDC	Error Detection Code byte
EDGE	Enhanced Data rates for GSM Evolution
EEL	Electric Echo Loss
EFR	Enhanced Full Rate
EFS	Error free seconds
EGPRS	Enhanced GPRS
EIR	Equipment Identity Centre
	Equipment Identity Register
EIRP	Equivalent Isotropic Radiated Power
EL	Echo Loss
EF	Elementary File
EM	Element Manager
EMC	ElectroMagnetic Compatibility
eMLPP	enhanced Multi-Level Precedence and Pre-emption
EMMI	Electrical Man Machine Interface
EPC	Enhanced Power Control
EPCCCH	Enhanced Power Control Channel
EPROM	Erasable Programmable Read Only Memory
ERP	Ear Reference Point
	Equivalent Radiated Power
ERR	Error
ETNS	European Telecommunications Numbering Space
ETR	ETSI Technical Report

ETS	European Telecommunication Standard
ETSI	European Telecommunications Standards Institute
etu	elementary time unit

## F

FA	Full Allocation
	Fax Adaptor
FAC	Final Assembly Code
FACCH	Fast Associated Control CHannel
FACCH/F	Fast Associated Control Channel/Full rate
FACCH/H	Fast Associated Control Channel/Half rate
FACH	Forward Access Channel
FAUSCH	Fast Uplink Signalling Channel
FAX	Facsimile
FB	Frequency correction Burst
FBI	Feedback Information
FCCH	Frequency Correction CHannel
FCI	File Control Information
FCS	Frame Check Sequence
FDD	Frequency Division Duplex
FDM	Frequency Division Multiplex
FDMA	Frequency Division Multiple Access
FDN	Fixed Dialling Number
FDR	False transmit format Detection Ratio
FEC	Forward Error Correction
FER	Frame Erasure Rate, Frame Error Rate
FFS	For Further Study
FH	Frequency Hopping
FM	Fault Management
FN	Frame Number
FNUR	Fixed Network User Rate
FP	Frame Protocol
FR	Full Rate
FTAM	File Transfer Access and Management
fn	forwarded-to number

## G

G-RNTI	GERAN Radio Network Temporary Identity
GC	General Control (SAP)
GCR	Group Call Register
GERAN	GSM/EDGE Radio Access Network
GGSN	Gateway GPRS Support Node
GID1	Group Identifier (level 1)
GID2	Group Identifier (level 2)
GMLC	Gateway Mobile Location Centre
GMM	GPRS Mobility Management
GMSC	Gateway MSC
GMSK	Gaussian Minimum Shift Keying
GP	Guard Period
GPA	GSM PLMN Area
GPRS	General Packet Radio Service
GRA	GERAN Registration Area
GSA	GSM System Area
GSIM	GSM Service Identity Module
GSM	Global System for Mobile communications
GSN	GPRS Support Nodes
GT	Global Title
GTP	GPRS Tunneling Protocol

GTP-U      GPRS Tunnelling Protocol for User Plane  
GTT        Global Text Telephony

## H

H-CSCF      Home CSCF  
HANDO      Handover  
HCS        Hierarchical Cell Structure  
HDLCL      High Level Data Link Control  
HE-VASP    Home Environment Value Added Service Provider  
HF        Human Factors  
HFN        HyperFrame Number  
HHO        Hard Handover  
HLC        High Layer Compatibility  
HLR        Home Location Register  
HN        Home Network  
HO        Handover  
HOLD      Call hold  
HPLMN     Home Public Land Mobile Network  
HPS        Handover Path Switching  
HPU        Hand Portable Unit  
HR        Half Rate  
HRR        Handover Resource Reservation  
HSCSD     High Speed Circuit Switched Data  
HSN        Hopping Sequence Number  
HSS        Home Subscriber Server  
HTTP      Hyper Text Transfer Protocol  
HTTPS     Hyper Text Transfer Protocol Secure (https is http/1.1 over SSL, i.e. port 443)  
HU        Home Units

## I

I-Block    Information Block  
I-ETS      Interim European Telecommunications Standard  
I/O        Input/Output  
I        Information frames (RLP)  
IA        Incoming Access (closed user group SS)  
IAM       Initial Address Message  
IC        Integrated Circuit  
          Interlock Code (CUG SS)  
IC(pref)   Interlock Code of the preferential CUG  
ICB       Incoming Calls Barred (within the CUG)  
ICC       Integrated Circuit Card  
ICGW      Incoming Call Gateway  
ICM       In-Call Modification  
ICMP      Internet Control Message Protocol  
ID        Identifier  
IDL       Interface Definition Language  
IDN       Integrated Digital Network  
IDNNS     Intra Domain NAS Node Selector  
IE        Information Element  
IEC       International Electrotechnical Commission  
IEI       Information Element Identifier  
IETF      Internet Engineering Task Force  
IF        Infrastructure  
IFS       Information Field Sizes  
IFSC      Information Field Size for the UICC  
IFSD      Information Field Size for the Terminal  
IHOSS     Internet Hosted Octet Stream Service  
IIOP      Internet Inter-ORB Protocol

IK	Integrity key
IM	Intermodulation
IMA	Inverse Multiplexing on ATM
IMEI	International Mobile Equipment Identity
IMGI	International mobile group identity
IMSI	International Mobile Subscriber Identity
IMT-2000	International Mobile Telecommunications 2000
IMUN	International Mobile User Number
IN	Intelligent Network
	Interrogating Node
INAP	Intelligent Network Application Part
INF	INformation field
IP	Internet Protocol
IP-M	IP Multicast
IPv4	Internet Protocol Version 4
IPv6	Internet Protocol Version 6
IR	Infrared
IRP	Integration Reference Point
ISC	International Switching Centre
ISCP	Interference Signal Code Power
ISDN	Integrated Services Digital Network
ISO	International Organisation for Standardisation
ISP	Internet Service Provider
ISUP	ISDN User Part
ITC	Information Transfer Capability
ITU	International Telecommunication Union
IUI	International USIM Identifier
IWF	InterWorking Function
IWMSC	InterWorking MSC
IWU	Inter Working Unit

## J

JAR file	Java Archive File
JD	Joint Detection
JNDI	Java Naming Directory Interface
JP	Joint Predistortion
JPEG	Joint Photographic Experts Group
JTAPI	Java Telephony Application Programming Interface

## K

k	Windows size
K	Constraint length of the convolutional code
kbps	kilo-bits per second
Kc	Ciphering key
Ki	Individual subscriber authentication key
ksps	kilo-symbols per second

## L

L1	Layer 1 (physical layer)
L2	Layer 2 (data link layer)
L2ML	Layer 2 Management Link
L2R	Layer 2 Relay
L2R BOP	L2R Bit Orientated Protocol
L2R COP	L2R Character Orientated Protocol
L3	Layer 3 (network layer)
LA	Location Area
LAC	Link Access Control

	Location Area Code
LAI	Location Area Identity
LAN	Local Area Network
LAPB	Link Access Protocol Balanced
LAPDm	Link Access Protocol on the Dm channel
LATA	Local Access and Transport Area
LAU	Location Area Update
LCD	Low Constrained Delay
LCN	Local Communication Network
LCP	Link Control Protocol
LCS	Location Services
LCSC	LCS Client
LCSS	LCS Server
LE	Local Exchange
LEN	LENgth
LI	Length Indicator
	Line Identity
LLC	Logical Link Control
	Low Layer Compatibility
Lm	Traffic channel with capacity lower than a Bm
LMSI	Local Mobile Station Identity
LMU	Location Measurement Unit
LN	Logical Name
LND	Last Number Dialed
LNS	L2TP Network Server
LPLMN	Local PLMN
LR	Location Register
LSA	Localised Service Area
LSB	Least Significant Bit
LSTR	Listener SideTone Rating
LTE	Local Terminal Emulator
LTZ	Local Time Zone
LU	Local Units
	Location Update
LV	Length and Value

## M

M	Mandatory
MA	Mobile Allocation
	Multiple Access
MAC-A	MAC used for authentication and key agreement (TSG T WG3 context)
MAC-I	MAC used for data integrity of signalling messages (TSG T WG3 context)
MAC	Medium Access Control (protocol layering context)
	Message authentication code (encryption context)
MACN	Mobile Allocation Channel Number
MAF	Mobile Additional Function
MAH	Mobile Access Hunting supplementary service
MAHO	Mobile Assisted Handover
MAI	Mobile Allocation Index
MAIO	Mobile Allocation Index Offset
MAP	Mobile Application Part
MCC	Mobile Country Code
MCI	Malicious Call Identification supplementary service
MCML	Multi-Class Multi-Link PPP
Mcps	Mega-chips per second
MCS	Modulation and Coding Scheme
MCU	Media Control Unit
MD	Mediation Device

MDL	(mobile) Management (entity) - Data Link (layer)
MDS	Multimedia Distribution Service
ME	Maintenance Entity
	Mobile Equipment
MEF	Maintenance Entity Function
MEHO	Mobile evaluated handover
MER	Message Error Ratio
MExE	Mobile Execution Environment
MF	Master File
	MultiFrame
MGCF	Media Gateway Control Function
MGCP	Media Gateway Control Part
MGT	Mobile Global Title
MGW	Media GateWay
MHEG	Multimedia and Hypermedia Information Coding Expert Group
MHS	Message Handling System
MIC	Mobile Interface Controller
MIB	Management Information Base
MIM	Management Information Model
MIP	Mobile IP
MIPS	Million Instructions Per Second
MLC	Mobile Location Centre
MM	Man Machine
	Mobility Management
	Multimedia
MME	Mobile Management Entity
MMI	Man Machine Interface
MNC	Mobile Network Code
MNP	Mobile Number Portability
MO	Mobile Originated
MO-LR	Mobile Originating Location Request
MOHO	Mobile Originated Handover
MOS	Mean Opinion Score
MoU	Memorandum of Understanding
MP	Multi-link PPP
MPEG	Moving Pictures Experts Group
MPH	(mobile) Management (entity) - PHysical (layer) [primitive]
MPTY	MultiParTY
MRF	Media Resource Function
MRP	Mouth Reference Point
MS	Mobile Station
MSB	Most Significant Bit
MSC	Mobile Switching Centre
MSCM	Mobile Station Class Mark
MSCU	Mobile Station Control Unit
MSE	MExE Service Environment
MSID	Mobile Station Identifier
MSIN	Mobile Station Identification Number
MSISDN	Mobile Subscriber ISDN Number
MSP	Multiple Subscriber Profile
MSRN	Mobile Station Roaming Number
MT	Mobile Terminated
	Mobile Termination
MT-LR	Mobile Terminating Location Request
MTM	Mobile-To-Mobile (call)
MTP	Message Transfer Part
MTP3-B	Message Transfer Part level 3
MTU	Maximum Transfer Unit
MU	Mark Up
MUI	Mobile User Identifier

MUMS Multi User Mobile Station  
MVNO Mobile Virtual Network Operator

## N

NACC Network Assisted Cell Change  
NAD Node Address byte  
NAI Network Access Identifier  
NAS Non-Access Stratum  
NBAP Node B Application Part  
NB Normal Burst  
NCELL Neighbouring (of current serving) Cell  
NBAP Node B Application Part  
NBIN A parameter in the hopping sequence  
NCC Network (PLMN) Colour Code  
NCH Notification CHannel  
NCK Network Control Key  
NCP Network Control Protocol  
NDC National Destination Code  
NDUB Network Determined User Busy  
NE Network Element  
NEF Network Element Function  
NEHO Network evaluated handover  
NET Norme Europeenne de Télécommunications  
NEV NEVer  
NF Network Function  
NI-LR Network Induced Location Request  
NIC Network Independent Clocking  
NITZ Network Identity and Time Zone  
NM Network Manager  
NMC Network Management Centre  
NMO Network Mode of Operation  
NMS Network Management Subsystem  
NMSI National Mobile Station Identifier  
NNI Network-Node Interface  
NO Network Operator  
NP Network Performance  
NPA Numbering Plan Area  
NPI Numbering Plan Identifier  
NRI Network Resource Identifier  
NRM Network Resource Model  
NRT Non-Real Time  
NSAP Network Service Access Point  
NSAPI Network Service Access Point Identifier  
NSCK Network Subset Control Key  
NSDU Network service data unit  
NSS Network Sub System  
Nt Notification (SAP)  
NT Network Termination  
Non Transparent  
NTAAB New Type Approval Advisory Board  
NTDD Narrow-band Time Division Duplexing  
NUA Network User Access  
NUI National User / USIM Identifier  
Network User Identification  
NUP National User Part (SS7)  
NW Network



## O

O	Optional
O&M	Operations & Maintenance
OA	Outgoing Access (CUG SS)
OACSU	Off-Air-Call-Set-Up
OCB	Outgoing Calls Barred within the CUG
ODCCCH	ODMA Common Control Channel
OCF	Open Card Framework
OCNS	Orthogonal Channel Noise Simulator
OD	Optional for operators to implement for their aim
ODB	Operator Determined Barring
ODCCCH	ODMA Dedicated Control Channel
ODCH	ODMA Dedicated Channel
OLR	Overall Loudness Rating
ODMA	Opportunity Driven Multiple Access
ODTCH	ODMA Dedicated Traffic Channel
OMC	Operation and Maintenance Centre
OML	Operations and Maintenance Link
OR	Optimal Routeing
ORACH	ODMA Random Access CHannel
ORLCF	Optimal Routeing for Late Call Forwarding
OS	Operations System
OSA	Open Service Access
OSI	Open System Interconnection
OSI RM	OSI Reference Model
OSP	Octet Stream Protocol
OSP:IHOSS	Octet Stream Protocol for Internet Hosted Octet Stream Service
OVSF	Orthogonal Variable Spreading Factor

## P

P-CCPCH	Primary Common Control Physical Channel
P-CPIH	Primary Common Pilot Channel
P-TMSI	Packet TMSI
PABX	Private Automatic Branch eXchange
PACCH	Packet Associated Control Channel
PAD	Packet Assembler/Disassembler
PAGCH	Packet Access Grant Channel
PAP	Password Authentication Protocol
PAR	Peak to Average Ratio
PBCCH	Packet Broadcast Control Channel
PBP	Paging Block Periodicity
PBX	Private Branch eXchange
PC	Power Control
	Personal Computer
PCB	Protocol Control Byte
PCCC	Parallel Concatenated Convolutional Code
PCCCH	Packet Common Control Channel
PCCH	Paging Control Channel
PCDE	Peak Code Domain Error
PCG	Project Co-ordination Group
PCH	Paging Channel
PCK	Personalisation Control Key
PCM	Pulse Code Modulation
PCMCIA	Personal Computer Memory Card International Association
PCPCH	Physical Common Packet Channel
PCS	Personal Communication System
PCU	Packet Control Unit
PD	Protocol Discriminator

	Public Data
PDCP	Packet Data Convergence Protocol
PDCH	Packet Data Channel
PDH	Plesiochronous Digital Hierarchy
PDN	Public Data Network
	Packet Data Network
PDP	Packet Data Protocol
PDSCH	Physical Downlink Shared Channel
PDTCH	Packet Data Traffic Channel
PDU	Protocol Data Unit
PG	Processing Gain
PH	Packet Handler
	PHysical (layer)
PHF	Packet Handler Function
PHI	Packet Handler Interface
PHS	Personal Handyphone System
PHY	Physical layer
PhyCH	Physical Channel
PI	Page Indicator
	Presentation Indicator
PICH	Page Indicator Channel
PICS	Protocol Implementation Conformance Statement
PID	Packet Identification
PIN	Personal Identification Number
PIXT	Protocol Implementation eXtra information for Testing
PLMN	Public Land Mobile Network
PMD	Physical Media Dependent
PN	Pseudo Noise
PNE	Présentation des Normes Européennes
PNP	Private Numbering Plan
POI	Point Of Interconnection (with PSTN)
POTS	Plain Old Telephony Service
PP	Point-to-Point
PPCH	Packet Paging Channel
PPE	Primitive Procedure Entity
PPF	Paging Proceed Flag
PPM	Parts Per Million
PPP	Point-to-Point Protocol
PPS	Protocol and Parameter Select (response to the ATR)
PRACH	Physical Random Access Channel
	Packet Random Access Channel
Pref CUG	Preferential CUG
PS	Packet Switched
	Location Probability
PSC	Primary Synchronisation Code
PSCH	Physical Shared Channel
PSE	Personal Service Environment
PSPDN	Packet Switched Public Data Network
PSTN	Public Switched Telephone Network
PTCCH	Packet Timing advance Control Channel
PTM	Point-to-Multipoint
PTM-G	PTM Group Call
PTM-M	PTM Multicast
PTP	Point to point
PU	Payload Unit
PUCT	Price per Unit Currency Table
PUSCH	Physical Uplink Shared Channel
PVC	Permanent Virtual Circuit
PW	Pass Word

## Q

QA	Q (Interface) - Adapter
QAF	Q - Adapter Function
QoS	Quality of Service
QPSK	Quadrature (Quaternary) Phase Shift Keying

## R

R	Value of Reduction of the MS transmitted RF power relative to the maximum allowed output power of the highest power class of MS (A)
R-APDU	Response APDU
R-Block	Receive-ready Block
R-SGW	Roaming Signalling Gateway
R-TPDU	Response TPDU
R99	Release 1999
RA	Routing Area
	Random mode request information field
RAB	Radio Access Bearer
	Random Access Burst
RAC	Routing Area Code
RACH	Random Access Channel
RADIUS	Remote Authentication Dial In User Service
RAI	Routing Area Identity
RAN	Radio Access Network
RANAP	Radio Access Network Application Part
RAND	RANDom number (used for authentication)
RAT	Radio Access Technology
RAU	Routing Area Update
RB	Radio Bearer
RBER	Residual Bit Error Ratio
RDF	Resource Description Format
RDI	Restricted Digital Information
REC	RECommendation
REJ	REJect(ion)
REL	RELease
Rel-4	Release 4
Rel-5	Release 5
REQ	REQuest
RF	Radio Frequency
RFC	Request For Comments
	Radio Frequency Channel
RFCH	Radio Frequency CHannel
RFE	Routing Functional Identity
RFN	Reduced TDMA Frame Number
RFU	Reserved for Future Use
RL	Radio Link
RLC	Radio Link Control
RLCP	Radio Link Control Protocol
RLP	Radio Link Protocol
RLR	Receiver Loudness Rating
RLS	Radio Link Set
RMS	Root Mean Square (value)
RNC	Radio Network Controller
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RNTABLE	Table of 128 integers in the hopping sequence
RNTI	Radio Network Temporary Identity
RPLMN	Registered Public Land Mobile Network
RPOA	Recognised Private Operating Agency

RR	Radio Resources
RRC	Radio Resource Control
RRM	Radio Resource Management
RSCP	Received Signal Code Power
RSE	Radio System Entity
RSL	Radio Signalling Link
RSSI	Received Signal Strength Indicator
RST	Reset
RSVP	Resource ReserVation Protocol
RSZI	Regional Subscription Zone Identity
RT	Real Time
RTE	Remote Terminal Emulator
RTP	Real Time Protocol
RU	Resource Unit
RWB	Resolution Bandwidth
RX	Receive
RXLEV	Received signal level
RXQUAL	Received Signal Quality

## S

S-Block	Supervisory Block
S-CCPCH	Secondary Common Control Physical Channel
S-CPICH	Secondary Common Pilot Channel
S-CSCF	Serving CSCF
S-RNTI	SRNC Radio Network Temporary Identity
SAAL	Signalling ATM Adaptation Layer
SABM	Set Asynchronous Balanced Mode
SACCH	Slow Associated Control Channel
SACCH/C4	Slow Associated Control CHannel/SDCCH/4
SACCH/C8	Slow Associated Control CHannel/SDCCH/8
SACCH/T	Slow Associated Control CHannel/Traffic channel
SACCH/TF	Slow Associated Control CHannel/Traffic channel Full rate
SACCH/TH	Slow Associated Control CHannel/Traffic channel Half rate
SAD	Source ADdress
SAP	Service Access Point
SAPI	Service Access Point Identifier
SAR	Segmentation and Reassembly
SAT	SIM Application Toolkit
SB	Synchronization Burst
SBSC	Serving Base Station Controller
SBSS	Serving Base Station Subsystem
SC	Service Centre (used for SMS)
	Service Code
SCCH	Synchronisation Control Channel
SCCP	Signalling Connection Control Part
SCF	Service Control Function (IN context), Service Capability Feature (VHE/OSA context)
SCH	Synchronisation Channel
SCI	Subscriber Controlled Input
SCN	Sub-Channel Number
SCP	Service Control Point
SCTP	S Common Transport Protocol CHECK WITH wg3
SDCCH	Stand-Alone Dedicated Control Channel
SDH	Synchronous Digital Hierarchy
SDL	Specification Description Language
SDT	SDL Development Tool
SDU	Service Data Unit
SE	Security Environment
	Support Entity

SEF	Support Entity Function
SF	Spreading Factor
SFH	Slow Frequency Hopping
SFI	Short EF Identifier
SFN	System Frame Number
SGSN	Serving GPRS Support Node
SHCCH	Shared Channel Control Channel
SI	Screening Indicator
	Service Interworking
	Supplementary Information (SIA=Supplementary Information A)
SIC	Service Implementation Capabilities
SID	Silence Descriptor
SIM	GSM Subscriber Identity Module
SIP	Session Initiated Protocol
SIR	Signal-to-Interference Ratio
SLA	Service Level Agreement
SLPP	Subscriber LCS Privacy Profile
SLR	Send Loudness Rating
SLTM	Signalling Link Test Message
SM	Session Management
	Short Message
SMDS	Switched Multimegabit Data Service
SME	Short Message Entity
SMG	Special Mobile Group
SMI	Structure of Management Information (RFC 1155)
SMLC	Serving Mobile Location Centre
SMS	Short Message Service
SMS-CB	SMS Cell Broadcast
SMS-SC	Short Message Service - Service Centre
SMS/PP	Short Message Service/Point-to-Point
Smt	Short message terminal
SN	Serving Network
	Subscriber Number
SNDCP	Sub-Network Dependent Convergence Protocol
SNMP	Simple Network Management Protocol
SNR	Serial Number
SOA	Suppress Outgoing Access (CUG SS)
SoLSA	Support of Localised Service Area
SP	Switching Point
	Service Provider
SPC	Signalling Point Code
	Suppress Preferential CUG
SPCK	Service Provider Control Key
SQN	Sequence number
SRB	Signalling Radio Bearer
SRES	Signed RESponse (authentication)
SRNC	Serving Radio Network Controller
SRNS	Serving RNS
SS	Supplementary Service
	System Simulator
SS7	Signalling System No. 7
SSC	Secondary Synchronisation Code
	Supplementary Service Control string
SSCOP	Service Specific Connection Oriented Protocol
SSCF	Service Specific Co-ordination Function
SSCF-NNI	Service Specific Coordination Function – Network Node Interface
SSCS	Service Specific Convergence Sublayer
SSDT	Site Selection Diversity Transmission
SSF	Service Switching Function
SSN	Sub-System Number

SSSAR	Service Specific Segmentation and Re-assembly sublayer
STC	Signalling Transport Converter
STM	SideTone Masking Rating
STP	Signalling Transfer Point
STTD	Space Time Transmit Diversity
SVC	Switched virtual circuit
SVN	Software Version Number
SW	Status Word
	Software

## T

T-SGW	Transport Signalling Gateway
T	Timer
	Transparent
	Type only
TA	Terminal Adaptation
	Timing Advance
TAC	Type Approval Code
TAF	Terminal Adaptation Function
TBF	Temporary Block Flow
TBR	Technical Basis for Regulation
TC	Transaction Capabilities
	TransCoder
	Transmission Convergence
TCH	Traffic Channel
TCH/F	A full rate TCH
TCH/F2,4	A full rate data TCH ( $\leq 2,4$ kbit/s)
TCH/F4,8	A full rate data TCH (4,8 kbit/s)
TCH/F9,6	A full rate data TCH (9,6 kbit/s)
TCH/FS	A full rate Speech TCH
TCH/H	A half rate TCH
TCH/H2,4	A half rate data TCH ( $\leq 2,4$ kbit/s)
TCH/H4,8	A half rate data TCH (4,8 kbit/s)
TCH/HS	A half rate Speech TCH
TC-TR	Technical Committee Technical Report
TCI	Transceiver Control Interface
TCP	Transmission Control Protocol
TD-CDMA	Time Division-Code Division Multiple Access
TDD	Time Division Duplex
TDMA	Time Division Multiple Access
TDoc	Temporary Document
TE	Terminal Equipment
TE9	Terminal Equipment 9 (ETSI sub-technical committee)
Tei	Terminal endpoint identifier
TEID	Tunnel End Point Identifier
TF	Transport Format
TFA	TransFer Allowed
TFC	Transport Format Combination
TFCI	Transport Format Combination Indicator
TFCS	Transport Format Combination Set
TFI	Transport Format Indicator
	Temporary Flow Identity
TFP	TransFer Prohibited
TFS	Transport Format Set
TFT	Traffic Flow Template
TI	Transaction Identifier
TLI	Temporary Logical Link Identity
TLS	Transport Layer Security
TLV	Tag Length Value

TM	Telecom Management
TMF	Telecom Management Forum
TMN	Telecom Management Network
TMSI	Temporary Mobile Subscriber Identity
TN	Termination Node
	Timeslot Number
TO	Telecom Operations Map
TOA	Time of Arrival
TON	Type Of Number
TP	Third Party
TPC	Transmit Power Control
TPDU	Transfer Protocol Data Unit
TR	Technical Report
TRAU	Transcoder and Rate Adapter Unit
TrCH	Transport Channel
TRX	Transceiver
TS	Technical Specification
	Teleservice
	Time Slot
TSC	Training Sequence Code
TSDI	Transceiver Speech & Data Interface
TSG	Technical Specification Group
TSTD	Time Switched Transmit Diversity
TTCN	Tree and Tabular Combined Notation
TTI	Transmission Timing Interval
TUP	Telephone User Part (SS7)
TV	Type and Value
TX	Transmit
TXPWR	Transmit PoWeR; Tx power level in the MS_TXPWR_REQUEST and MS_TXPWR_CONF parameters

## U

U-RNTI	UTRAN Radio Network Temporary Identity
UARFCN	UTRA Absolute Radio Frequency Channel Number
UARFN	UTRA Absolute Radio Frequency Number
UART	Universal Asynchronous Receiver and Transmitter
UCS2	Universal Character Set 2
UDD	Unconstrained Delay Data
UDI	Unrestricted Digital Information
UDP	User Datagram Protocol
UDUB	User Determined User Busy
UE	User Equipment
UE <sub>R</sub>	User Equipment with ODMA relay operation enabled
UI	User Interface
	Unnumbered Information (Frame)
UIC	Union Internationale des Chemins de Fer
UICC	Universal Integrated Circuit Card
UL	Uplink (Reverse Link)
UM	Unacknowledged Mode
UML	Unified Modelling Language
UMS	User Mobility Server
UMSC	UMTS Mobile Services Switching Centre
UMTS	Universal Mobile Telecommunications System
UNI	User-Network Interface
UP	User Plane
UPCMI	Uniform PCM Interface (13-bit)
UPD	Up to date
UPT	Universal Personal Telecommunication

URA	User Registration Area
	UTRAN Registration Area
URAN	UMTS Radio Access Network
URB	User Radio Bearer
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
USB	Universal Serial Bus
USC	UE Service Capabilities
USCH	Uplink Shared Channel
USF	Uplink State Flag
USIM	Universal Subscriber Identity Module
USSD	Unstructured Supplementary Service Data
UT	Universal Time
UTRA	Universal Terrestrial Radio Access
UTRAN	Universal Terrestrial Radio Access Network
UUI	User-to-User Information
UUS	Uu Stratum
	User-to-User Signalling

## V

V	Value only
VA	Voice Activity factor
VAD	Voice Activity Detection
VAP	Videotex Access Point
VASP	Value Added Service Provider
VBR	Variable Bit Rate
VBS	Voice Broadcast Service
VC	Virtual Circuit
VGCS	Voice Group Call Service
VHE	Virtual Home Environment
VLR	Visitor Location Register
VMSC	Visited MSC
VoIP	Voice Over IP
VPLMN	Visited Public Land Mobile Network
VPN	Virtual Private Network
VSC	Videotex Service Centre
V(SD)	Send state variable
VTX host	The components dedicated to Videotex service

## W

WAE	Wireless Application Environment
WAP	Wireless Application Protocol
WBEM	Web Based Enterprise Management
WCDMA	Wideband Code Division Multiple Access
WDP	Wireless Datagram Protocol
WG	Working Group
WIN	Wireless Intelligent Network
WPA	Wrong Password Attempts (counter)
WS	Work Station
WSP	Wireless Session Protocol
WTA	Wireless Telephony Applications
WTAI	Wireless Telephony Applications Interface
WTDD	Wideband Time Division Duplexing
WTLS	Wireless Transport Layer Security
WTP	Wireless Transaction Protocol



WTX      Waiting Time eXtension  
WWT      Work Waiting Time  
WWW      World Wide Web

X

XRES      EXpected user RESponse  
XID      eXchange IDentifier

Y

&lt;void&gt;

Z

ZC      Zone Code

## 5 Equations

$\frac{CPICH\_E_c}{I_{or}}$	The ratio of the received energy per PN chip of the CPICH to the total transmit power spectral density at the Node_B (SS) antenna connector.
$DPCH\_E_c$	Average energy per PN chip for DPCH.
$\frac{DPCH\_E_c}{I_{or}}$	The ratio of the transmit energy per PN chip of the DPCH to the total transmit power spectral density at the Node_B antenna connector.
$\frac{DPCCH\_E_c}{I_{or}}$	The ratio of the transmit energy per PN chip of the DPCCH to the total transmit power spectral density at the Node B antenna connector.
$\frac{DPDCH\_E_c}{I_{or}}$	The ratio of the transmit energy per PN chip of the DPDCH to the total transmit power spectral density at the Node B antenna connector.
$E_c$	Average energy per PN chip.
$\frac{E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for different fields or physical channels to the total transmit power spectral density.
$F_{uw}$	Frequency of unwanted signal
$I_o$	The total received power spectral density, including signal and interference, as measured at the UE antenna connector.
$I_{oac}$	The power spectral density of the adjacent frequency channel as measured at the UE antenna connector.
$I_{oc}$	The power spectral density of a band limited white noise source (simulating interference from cells, which are not defined in a test procedure) as measured at the UE antenna connector. The power spectral density of a band limited white noise source (simulating interference from other cells) as measured at the UE antenna connector.
$I_{or}$	The total transmit power spectral density of the Forward down link at the base station Node_B antenna connector.

$\hat{I}_{or}$	The received power spectral density of the down link as measured at the UE antenna connector.
$I_{ouw}$	Unwanted signal power level.
$OCNS\_E_c$	Average energy per PN chip for the OCNS.
$\frac{OCNS\_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the OCNS to the total transmit power spectral density.
$P-CCPCH\_E_c$	Average* energy per PN chip for P-CCPCH.
$P-CCPCH \frac{E_c}{I_o}$	The ratio of the received P-CCPCH energy per chip to the total received power spectral density at the UE antenna connector.
$\frac{P-CCPCH\_E_c}{I_{or}}$	The ratio of the average* transmit energy per PN chip for the P-CCPCH to the total transmit power spectral density.
$P-CPICH\_E_c$	Average* energy per PN chip for P-CPICH.
$PICH\_E_c$	Average* energy per PN chip for PICH.
$\frac{PICH\_E_c}{I_{or}}$	The ratio of the received energy per PN chip of the PICH to the total transmit power spectral density at the <u>Node B</u> (SS) antenna connector.
$PCCPCH \frac{E_c}{I_o}$	The ratio of the received PCCPCH energy per chip to the total received power spectral density at the UE antenna connector.
$\frac{PCCPCH\_E_c}{I_{or}}$	The ratio of the average transmit energy per PN chip for the PCCPCH to the total transmit power spectral density.
$\sum \frac{DPCH\_E_c}{I_{or}}$	The ratio of the sum DPCH_Ex for one service in case of multicode to the total transmit power spectral density of the downlink at the BS antenna connector.
$S-CCPCH\_E_c$	Average energy per PN chip for S-CCPCH.
$S-CPICH\_E_c$	Average* energy per PN chip for S-CPICH.
$SCH\_E_c$	Average* energy per PN chip for SCH.
$SCCPCH\_E_c$	Average energy per PN chip for SCCPCH.

\*Note: Averaging period for energy/power of discontinuously transmitted channels should be defined.